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ABSTRACT

The data presented in this report shows trends in doctorate awards by science and engineering (S&E) field and recipient characteristics, institutions awarding doctorates, and postgraduation plans of recipients. The source of the data is the Survey of Earned Doctorates (SED). The SED has been conducted annually for the National Science Foundation (NSF) and four other Federal agencies. Information from this survey becomes part of the Doctorate Records File, which is a census of recipients of research doctorates awarded since 1920 by regionally-accredited universities and colleges. Doctoral degrees such as the Ph.D. or D.Sc. are included in these surveys, but first-professional degrees such as the J.D. or M.D. are not. Data for the SED are collected directly from the individual doctorate recipients. The questionnaire is distributed to them through the cooperation of the Graduate Deans to persons as they are completing their doctorate. The data for a given year include all doctorates awarded in the 12-month period ending on June 30 of that year. These tables present detailed data on (S&E) doctorates recipients, with some totals provided for broad non-S&E fields. Detailed data on non-S&E fields are published in the Summary Report and by other Federal sponsors of the Survey of Earned Doctorates. The groupings of field specialties into broad fields may differ among the sponsoring agencies according to their missions. Approximately 92 percent of the annual cohort of doctorate recipients in 1998 responded to the questionnaire. Over the decade, though, the response rate ranged from 93 percent in 1988, then increased to 95 percent in 1994, then declined to 92 percent in 1997. Note that most of the numbers presented are actual self-reports, as there are no adjustments for nonresponse. For the nonrespondents, partial data from public sources are added to the file for nonrespondents; therefore, complete counts are presented for conferred doctorates by field of study and sex of recipient. Because some tables present data subject to nonresponse, these summaries represent the conservative known responses for any data item. Therefore, small changes in numbers should be interpreted with caution, as numerical trends are affected by fluctuations in response rates and declines and increases may appear greater than they may be in reality. (ASK)

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Detailed Statistical Tables

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Division of Science Resources Studies
Directorate for Social, Behavioral, and Economic Sciences
National Science Foundation

October 1999

Science and Engineering Doctorate Awards: 1998

Detailed Statistical Tables

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General Notes

The data presented in this report show trends in doctorate awards by science and engineering (S&E) field and recipient characteristics, institutions awarding doctorates, and postgraduation plans of recipients. The source of the data is the Survey of Earned Doctorates (SED).

The SED has been conducted annually for the National Science Foundation (NSF) and four other Federal agencies. Information from this survey becomes part of the Doctorate Records File, which is a census of recipients of research doctorates awarded since 1920 by regionally-accredited universities and colleges. Doctoral degrees such as the Ph.D. or D. Sc. are included in these surveys, but first-professional degrees such as the J.D. or M.D. are not.

Data for the SED are collected directly from the individual doctorate recipients. The questionnaire is distributed to them through the cooperation of the Graduate Deans to persons as they are completing their doctorate. The data for a given year include all doctorates awarded in the 12-month period ending on June 30 of that year.

These tables present detailed data on (S&E) doctorates recipients, with some totals provided for broad non-S&E fields. Detailed data on non-S&E fields are published in the Summary Report and by other Federal sponsors of the Survey of Earned Doctorates. The groupings of field specialties into broad fields may differ among the sponsoring agencies according to their missions.

Approximately 92 percent of the annual cohort of doctorate recipients in 1998 responded to the questionnaire. Over the decade, though, the response rate ranged from 93 percent in 1988, then increased to 95 percent in 1994, then declined to 92 percent in 1997. Note that most of the numbers presented are actual self-reports, as there are no adjustments for nonresponse. For the nonrespondents, partial data from public sources are added to the file for nonrespondents; therefore, complete counts are presented for conferred doctorates by field of study and sex of recipient. Because some tables present data subject to nonresponse, these summaries represent the conservative known responses for any data item. Therefore, small changes in numbers should be interpreted with caution, as numerical trends are affected by fluctuations in response rates and declines and increases may appear greater than they may be in reality.

For further information on the survey methodology or the availability of data on S&E doctorate recipients, please go to http://www.nsf.gov/sbe/srs/ssed/sedmeth.htm or contact—

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Table 1. Science and engineering (S&E) doctorates awarded, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Science and engineering, total	21,732	22,868	24,023	24,675	25,443	26,205	26,535	27,229	27,180	27,272
Engineering, total	4,543	4,894	5,214	5,438	5,698	5,822	6,008	6,305	6,098	5,919
Aeronautical/astronautical engineering	178	192	207	234	228	230	252	287	270	242
Chemical engineering, total	712	658	691	725	737	725	708	798	767	774
Chemical	625	561	621	607	624	630	602	681	662	667
Petroleum	29	49	28	54	52	42	48	52	51	48
Polymer/plastics [1]	58	48	42	64	61	53	58	65	54	59
Civil engineering, total	538	553	575	594	624	684	656	697	655	650
Civil	498	505	509	540	563	602	572	599	592	587
Environmental health	40	48	66	54	61	82	84	98	63	63
Electrical engineering, total	1,137	1,276	1,405	1,483	1,543	1,673	1,731	1,740	1,718	1,593
Communications	25	35	21	30	22	33	29	32	33	40
Computer	117	131	178	175	167	202	189	208	227	210
Electrical/electronics	995	1,110	1,206	1,278	1,354	1,438	1,513	1,500	1,458	1,343
Industrial/manufacturing engineering [2]	162	151	165	196	236	228	284	258	242	227
Materials/metallurgical engineering, total	380	440	489	485	535	539	588	572	580	565
Ceramic sciences [3]	35	43	58	42	42	39	39	41	39	24
Materials science	257	307	361	365	416	433	476	470	481	482
Metallurgical	88	90	70	78	77	67	73	61	60	59
Mechanical engineering, total	760	884	875	987	1,030	1,015	1,025	1,052	1,017	1,022
Mechanical	650	773	762	855	902	883	917	947	924	936
Engineering mechanics	110	111	113	132	128	132	108	105	93	86
Other engineering, total	676	740	807	734	765	728	764	901	849	846
Agricultural	102	101	83	84	86	89	73	104	79	73
Bioengineering/biomedical	115	129	149	147	171	173	189	220	210	207
Engineering physics	16	16	23	25	21	17	17	37	24	15
Engineering science	27	37	42	51	55	46	56	52	45	50
Mining/mineral	33	39	38	26	24	23	19	31	33	21
Naval architecture/marine [4]	9	8	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nuclear	86	114	107	120	108	85	105	113	102	97
Ocean	20	17	21	21	24	29	21	26	34	29
Operations research	68	46	76	56	56	47	48	74	74	62
Systems	30	51	48	37	57	51	47	47	49	68
Engineering, general	61	75	78	64	47	39	60	60	51	30
Engineering, other	109	107	137	103	116	129	129	137	148	194
Sciences, total	17,189	17,974	18,809	19,237	19,745	20,383	20,527	20,924	21,082	21,353
Physical sciences, total	3,261	3,524	3,626	3,781	3,699	3,977	3,841	3,837	3,762	3,825
Astronomy, total	113	128	125	134	145	144	173	192	196	208
Astronomy	49	52	50	55	76	66	89	84	71	91
Astrophysics	64	76	75	79	69	78	84	108	125	117
Chemistry, total	1,970	2,100	2,194	2,214	2,137	2,257	2,162	2,148	2,143	2,217
Analytical	289	293	304	304	286	334	317	346	350	384
Inorganic	256	242	260	268	237	262	258	249	277	287
Medicinal/ pharmaceutical [5]	64	48	83	69	99	102	96	96	105	115
Nuclear	6	13	14	7	8	10	5	5	8	5
Organic	511	452	538	512	518	544	483	506	564	597
Physical	310	325	364	398	336	334	338	300	334	278
Polymer	78	81	111	83	107	117	116	121	110	123
Theoretical	46	55	45	59	53	52	40	57	48	41
Chemistry, general	312	524	400	449	431	447	458	396	261	286
Chemistry, other	98	67	75	65	62	55	51	72	86	101

See explanatory information, if any, and SOURCE at end of table

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Table 1. Science and engineering (S&E) doctorates awarded, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Physics, total	1,161	1,265	1,286	1,403	1,399	1,548	1,479	1,484	1,401	1,376
Acoustics	15	21	13	18	27	20	18	19	19	18
Chemical & atomic/molecular[6]	74	87	76	85	95	140	110	129	106	99
Electron[4]	4	2	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elementary particle	135	163	182	153	170	176	183	175	170	173
Fluids	14	17	14	17	19	12	18	21	24	26
Nuclear	81	73	66	86	82	90	91	87	106	92
Optics	78	76	85	94	96	104	98	129	123	104
Plasma & high-temperature[7]	61	42	58	65	62	79	46	48	39	55
Polymer	7	11	17	17	29	29	23	33	19	24
Solid state & low-temperature[8]	296	306	372	408	336	388	371	364	328	313
Physics, general	269	323	247	297	340	343	355	323	255	190
Physics, other	127	144	155	163	143	167	166	156	212	282
Other physical sciences	17	31	21	30	18	28	27	13	22	24
Earth, atmospheric, and ocean sciences, total	723	738	815	794	771	824	780	794	875	814
Atmospheric sciences, total	87	83	108	120	99	129	130	125	148	125
Atmospheric dynamics	16	20	21	23	23	27	16	21	25	24
Atmospheric physics/chemistry	15	18	20	36	13	27	27	22	44	38
Meteorology	27	20	31	28	34	32	25	35	28	25
Atmospheric science/meteorology, general	14	23	26	27	22	37	44	33	36	22
Atmospheric science/meteorology, other	15	2	10	6	7	6	18	14	15	16
Geosciences, total	455	477	560	503	479	509	454	452	487	504
Applied geology[4]	6	6	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Geology	165	166	192	166	197	194	186	162	164	171
Geochemistry	39	56	64	62	50	59	42	49	49	58
Geomorphology/glacial geology	10	14	18	12	16	13	11	11	26	20
Geophysics/seismology	87	91	117	108	101	106	93	101	108	106
Hydrology/water resources	24	13	16	29	25	30	24	31	43	35
Mineralogy/petrology	36	26	36	29	9	21	19	23	18	14
Paleontology	17	21	24	25	21	17	20	14	23	23
Stratigraphy/sedimentation	24	25	29	23	28	27	16	12	23	24
Geological & related sciences, general	19	31	30	18	15	18	21	27	16	13
Geological & related sciences, other	28	28	33	31	17	24	22	22	17	40
Oceanography, total	113	128	112	114	125	125	115	134	144	112
Marine sciences	26	39	27	32	27	34	32	27	30	18
Oceanography	87	89	85	82	98	91	83	107	114	94
Other environmental sciences	68	50	35	57	68	61	81	83	96	73

See explanatory information, if any, and SOURCE at end of table.

Table 1. Science and engineering (S&E) doctorates awarded, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Mathematical/computer sciences, total	1,471	1,597	1,839	1,927	2,026	2,021	2,187	2,043	2,030	2,100
Mathematics, total	859	892	1,039	1,058	1,146	1,118	1,190	1,122	1,125	1,177
Algebra	50	39	72	69	84	78	82	78	78	75
Analysis/functional analysis	103	90	132	105	105	107	99	100	103	130
Applied mathematics	158	185	193	213	188	206	211	230	242	265
Computing theory	12	12	19	12	18	16	14	18	14	18
Geometry	47	42	66	45	44	35	45	72	70	54
Logic	12	19	23	28	19	29	35	16	23	16
Mathematical statistics[9]	167	157	206	217	228	205	205	178	181	204
Number theory	23	26	30	25	42	37	35	42	46	46
Operations research	22	29	16	22	37	26	36	21	20	17
Topology	37	50	57	58	54	38	51	55	62	65
Mathematics, general	177	191	180	209	276	269	305	233	155	163
Mathematics, other	51	52	45	55	51	72	72	79	131	124
Computer sciences, total	612	705	800	869	880	903	997	921	905	923
Computer science	519	612	720	791	825	833	913	837	824	817
Information science/ systems	93	93	80	78	55	70	84	84	81	106
Biological/agricultural sciences, total	5,202	5,502	5,723	5,862	6,060	6,281	6,412	6,760	6,755	6,883
Biological sciences, total	4,116	4,328	4,650	4,799	5,092	5,203	5,376	5,723	5,777	5,848
Bacteriology	11	15	11	13	14	18	13	16	13	13
Biochemistry	669	678	765	715	846	804	824	794	830	798
Biomedical sciences[10]	N/A	N/A	N/A	N/A	N/A	N/A	93	140	158	184
Biophysics	87	103	100	125	103	123	155	142	147	166
Biotechnology research[11]	N/A	N/A	N/A	N/A	8	14	4	6	11	12
Plant genetics	18	31	23	33	41	30	35	41	30	40
Plant pathology	22	37	50	32	41	40	32	38	33	18
Plant physiology	47	51	65	68	48	70	55	73	47	61
Botany, other	117	104	105	107	105	117	102	105	91	113
Anatomy	80	70	77	75	76	66	64	47	50	35
Biometrics/biostatistics	46	47	59	63	74	72	67	81	84	75
Cell biology	133	145	149	188	231	237	236	233	250	299
Developmental biology/ embryology[12]	10	22	37	48	57	62	64	96	115	127
Ecology	161	166	189	180	177	201	203	245	255	292
Endocrinology	21	24	33	27	16	26	20	24	17	30
Entomology	139	147	138	139	114	123	121	136	123	138
Biological immunology[13]	152	153	177	181	169	161	190	238	214	245
Microbiology	340	335	372	377	433	423	426	444	409	384
Molecular biology	413	413	481	527	582	598	617	651	771	741
Neuroscience	181	192	238	238	276	284	309	404	435	412
Nutritional sciences	128	118	106	132	134	147	136	142	124	137
Parasitology	20	13	20	17	17	22	14	22	17	15
Toxicology	111	91	86	105	100	120	126	138	180	156
Human/animal genetics	112	153	160	142	172	203	202	212	217	196
Human/animal pathology	105	101	122	114	130	128	109	135	106	91
Human/animal pharmacology	242	244	266	279	274	259	278	316	300	256
Human/animal physiology	272	278	272	266	271	289	262	275	227	258
Zoology, other	132	122	125	134	114	117	145	100	96	111
Biological sciences, general	231	333	278	315	305	288	348	291	208	217
Biological sciences, other	116	142	146	159	164	161	126	138	219	228

See explanatory information, if any, and SOURCE at end of table.

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Table 1. Science and engineering (S&E) doctorates awarded, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agricultural sciences, total	1,086	1,174	1,073	1,063	968	1,078	1,036	1,037	978	1,035
Agronomy & crop science[14]	140	143	117	123	104	143	114	110	77	96
Animal breeding/genetics	23	22	18	23	18	17	19	12	24	18
Animal nutrition	67	54	57	41	52	58	50	54	55	45
Dairy science	16	20	19	14	11	11	14	9	14	10
Poultry science	11	17	13	22	16	21	11	12	9	11
Animal sciences, other	95	90	92	97	74	86	85	90	61	60
Fisheries science & management[15]	34	42	39	26	38	48	49	46	45	30
Wildlife/range management[16]	52	58	59	55	54	52	50	64	50	55
Food sciences[17]	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Food engineering[17]	11	10	12	14	9	16	7	7	11	13
Food sciences, other[17]	147	141	137	151	141	153	135	142	174	153
Forest biology[18]	22	27	17	29	18	20	24	19	22	20
Forest engineering[18]	1	2	2	2	3	N/A	4	0	13	2
Forest management[18]	21	14	22	16	17	17	20	22	21	27
Wood science & pulp/paper technology[18]	16	16	16	21	20	26	26	18	25	25
Conservation/renewable natural resources[18]	12	16	19	9	13	21	24	13	17	25
Forestry & related sciences, other[18]	57	62	45	62	55	59	71	56	50	69
Horticulture science	75	101	78	65	62	65	67	73	44	60
Plant breeding/genetics	64	87	69	82	68	81	72	63	67	69
Plant pathology	63	64	90	63	58	55	52	90	65	66
Plant protection-pest management[19]	6	4	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plant sciences, other	15	23	17	29	28	24	30	21	20	37
Soil chemistry/ microbiology[20]	28	27	24	24	26	21	27	29	32	27
Soil sciences, other[20]	75	91	78	63	59	69	72	78	56	74
Agricultural sciences, general	7	5	3	9	10	4	6	5	8	8
Agricultural sciences, other	27	38	28	23	14	11	7	4	18	35

See explanatory information, if any, and SOURCE at end of table.

Table 1. Science and engineering (S&E) doctorates awarded, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Psychology, total	3,208	3,281	3,250	3,263	3,420	3,379	3,429	3,491	3,566	3,681
Clinical	1,259	1,337	1,305	1,309	1,373	1,285	1,291	1,325	1,268	1,350
Cognitive psychology & psycholinguistics[21]	79	76	94	101	104	129	104	128	166	113
Comparative	8	8	7	2	5	8	4	3	6	6
Counseling	501	466	497	507	488	497	470	464	487	448
Developmental & child[22]	148	159	155	170	202	179	152	188	215	267
Educational	105	98	110	91	91	69	74	92	61	61
Experimental	146	143	142	154	143	139	151	128	145	149
Family & marriage counseling[10]	N/A	N/A	N/A	N/A	N/A	N/A	57	52	64	51
Human/indiv. & family dev.[23]	N/A	N/A	N/A	N/A	N/A	129	150	151	126	118
Industrial/organizational	104	126	142	138	159	137	155	162	185	189
Physiological/ psychobiology[24]	62	46	45	55	85	93	92	80	77	92
Quantitative	11	15	7	10	16	17	13	19	17	15
Personality	28	20	13	17	22	19	16	24	25	24
Psychometrics	6	8	9	5	9	5	10	11	11	8
School	107	82	82	88	95	84	91	82	84	106
Social	128	145	147	139	125	153	155	170	181	186
Psychology, general	364	371	324	295	306	280	306	279	319	302
Psychology, other	152	181	171	182	197	285	288	284	129	196
Social sciences, total	3,324	3,332	3,556	3,610	3,769	3,901	3,878	3,999	4,094	4,050
Economics, total	1,062	1,007	1,053	1,051	1,067	1,101	1,152	1,177	1,161	1,153
Agricultural economics	164	145	168	141	137	162	173	169	133	155
Econometrics	26	26	24	25	24	26	27	29	31	25
Economics	872	836	861	885	906	913	952	979	997	973
Political science, total	700	734	740	804	824	930	894	928	970	961
International relations & affairs[25]	94	97	88	76	102	112	73	99	88	97
Political science/ government	430	462	434	513	507	589	600	621	661	662
Public administration	97	88	107	108	117	135	128	104	95	105
Public policy analysis[26]	79	87	111	107	98	94	93	104	126	97
Sociology, total	458	448	493	512	535	548	555	527	598	580
Demography/population studies[27]	22	20	28	17	22	23	15	11	24	31
Sociology	436	428	465	495	513	525	540	516	574	549
Other social sciences, total	1,104	1,143	1,270	1,243	1,343	1,322	1,277	1,367	1,365	1,356
American studies	76	72	92	81	101	88	94	115	82	100
Anthropology	325	324	341	320	342	384	375	396	431	425
Archaeology	26	22	33	33	38	34	35	21	35	34
Area studies	17	22	24	33	36	34	27	28	10	14
Criminology	32	42	35	37	39	41	44	60	49	55
Geography	105	131	108	111	137	146	150	165	149	154
History/philosophy of science & technology[28]	20	26	27	28	37	27	41	37	34	43
Linguistics	188	167	227	266	214	221	201	230	244	219
Statistics	69	69	31	29	48	46	48	48	56	60
Urban affairs & studies[29]	62	67	90	86	123	132	103	106	92	75
Social sciences, general	26	23	36	33	32	21	35	26	26	30
Social sciences, other	158	178	226	186	196	148	124	135	157	147

See explanatory information, if any, and SOURCE at end of table.

Table 1. Science and engineering (S&E) doctorates awarded, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Non-S&E, total[30]	12,595	13,199	13,511	14,215	14,358	14,829	15,208	15,185	15,375	15,411
Health	974	956	1,041	1,112	1,197	1,296	1,330	1,324	1,422	1,500
Humanities[31]	3,242	3,535	3,720	4,036	4,092	4,374	4,690	4,713	5,029	5,103
Education	6,281	6,510	6,454	6,677	6,689	6,708	6,649	6,772	6,549	6,559
Professional/other	2,098	2,198	2,296	2,390	2,380	2,451	2,539	2,376	2,375	2,249
Grand total, all fields	34,327	36,067	37,534	38,890	39,801	41,034	41,743	42,414	42,555	42,683

1 In 1993 this subfield was changed from "Polymer engineering" to "Polymer and plastics engineering."

2 In 1993 this subfield was changed from "Industrial engineering" to "Industrial and manufacturing engineering."

3 In 1993 this subfield was changed from "Ceramic engineering" to "Ceramic sciences engineering."

4 These subfields were deleted in 1991: "Naval architecture/marine engineering," "Electron physics," and "Applied geology."

5 In 1993 this subfield was changed from "Pharmaceutical chemistry" to "Medicinal and pharmaceutical chemistry."

6 In 1993 this subfield was changed from "Atomic/molecular physics" to "Chemical and atomic/molecular physics."

7 In 1993 this subfield was changed from "Plasma physics" to "Plasma and high-temperature physics."

8 In 1993 this subfield was changed from "Solid state physics" to "Solid state and low-temperature physics."

9 In 1993 this subfield was changed from "Math probability and statistics" to "Mathematical statistics."

10 These subfields were introduced in 1995: "Biomedical sciences" and "Family and marriage counseling."

11 "Biotechnology research" was introduced in 1993.

12 In 1990 this subfield was changed from "Embryology" to "Developmental biology/embryology."

13 In 1993 this subfield was changed from "Immunology" to "Biological immunology."

14 In 1993 this subfield was changed from "Agronomy" to "Agronomy and crop science."

15 In 1993 this subfield was changed from "Fisheries science" to "Fisheries science and management."

16 In 1988 this subfield was changed from "Wildlife management" to "Wildlife/range management."

17 In 1990 "Food sciences" was separated into "Food engineering" and "Food sciences, other."

18 In 1988 "Forestry science" was separated into "Forest biology," "Forest engineering," "Forest management," "Wood science," "Renewable natural resources," and "Forestry and related sciences, other." In 1993 "Pulp and paper technology" was added to "Wood science," and "Conservation" was added to "Renewable natural resources." "Forest engineering" was deleted from the survey in 1994 and reintroduced in 1995.

19 "Plant protection-pest management" was deleted in 1991.

20 In 1988 "Soil sciences" was separated into "Soil chemistry/microbiology" and "Soil sciences, other."

21 In 1993 this subfield was changed from "Cognitive psychology" to "Cognitive psychology and psycholinguistics."

22 In 1993 this subfield was changed from "Developmental psychology" to "Developmental and child psychology."

23 "Human/individual & family development" was introduced in 1994.

24 In 1993 this subfield was changed from "Physiological psychology" to "Physiological psychology/psychobiology."

25 In 1993 this subfield was changed from "International relations" to "International relations and affairs."

26 In 1993 this subfield was changed from "Public policy studies" to "Public policy analysis."

27 In 1993 this subfield was changed from "Demography" to "Demography and population studies."

28 In 1993 this subfield was changed from "History of science" to "History and philosophy of science and technology."

29 In 1993 this subfield was changed from "Urban studies" to "Urban affairs and studies."

30 Non-S&E doctorates include those whose field of specialization is unknown.

31 Categories differ from those published by other Federal sponsors and the Summary Reports in that linguistics, history of science, American studies, and archaeology are included not in humanities but in social science.

KEY: N/A = Not available (i.e., the subfield was not identified separately in the questionnaire for that year)

SOURCE: National Science Foundation/Science Resources Studies, Survey of Earned Doctorates

Table 2. Science and engineering (S&E) doctorates awarded to women, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Percent women	
											1989	1998
Science and engineering, total	6,109	6,370	6,932	7,080	7,652	7,920	8,288	8,646	8,921	9,342	28.1	34.3
Engineering, total	375	415	467	506	522	635	696	776	747	769	8.3	13.0
Aeronautical/astronautical engineering	8	4	7	8	8	11	14	24	16	14	4.5	5.8
Chemical engineering, total	80	78	83	113	94	113	109	143	122	140	11.2	18.1
Chemical	74	71	75	101	83	101	96	126	106	119	11.8	17.8
Petroleum	1	0	1	3	5	3	1	3	3	6	3.4	12.5
Polymer/plastics[1]	5	7	7	9	6	9	12	14	13	15	8.6	25.4
Civil engineering, total	54	49	41	50	54	80	76	79	80	100	10.0	15.4
Civil	45	39	31	36	45	56	55	64	70	83	9.0	14.1
Environmental health	9	10	10	14	9	24	21	15	10	17	22.5	27.0
Electrical engineering, total	67	84	79	115	125	147	173	169	150	155	5.9	9.7
Communications	1	2	2	1	2	5	5	2	3	6	4.0	15.0
Computer	12	11	9	13	15	25	18	23	21	22	10.3	10.5
Electrical/electronics	54	71	68	101	108	117	150	144	126	127	5.4	9.5
Industrial/manufacturing engineering[2]	18	25	17	25	27	33	50	51	37	39	11.1	17.2
Materials/metallurgical engineering, total	45	49	77	61	78	83	95	83	106	84	11.8	14.9
Ceramic sciences[3]	4	11	10	9	6	9	5	3	8	2	11.4	8.3
Materials science	35	31	59	50	67	69	84	71	96	75	13.6	15.6
Metallurgical	6	7	8	2	5	5	6	9	2	7	6.8	11.9
Mechanical engineering, total	29	38	57	45	57	69	64	78	88	92	3.8	9.0
Mechanical	22	29	50	33	46	60	56	68	82	79	3.4	8.4
Engineering mechanics	7	9	7	12	11	9	8	10	6	13	6.4	15.1
Other engineering, total	74	88	106	89	79	99	115	149	148	145	10.9	17.1
Agricultural	6	7	8	6	6	10	7	17	12	5	5.9	6.8
Bioengineering/biomedical	26	23	27	33	31	45	48	49	53	50	22.6	24.2
Engineering physics	0	1	2	2	3	3	1	3	4	3	.0	20.0
Engineering science	3	6	3	6	3	3	6	4	7	8	11.1	16.0
Mining/mineral	4	2	6	3	1	3	0	3	3	4	12.1	19.0
Naval architecture/marine[4]	1	1	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11.1	-
Nuclear	7	9	6	9	5	8	9	9	8	10	8.1	10.3
Ocean	2	2	1	0	1	2	3	3	5	0	10.0	.0
Operations research	14	6	22	11	10	7	8	16	15	15	20.6	24.2
Systems	3	3	4	3	4	5	5	9	10	9	10.0	13.2
Engineering, general	2	10	7	3	3	4	9	11	3	3	3.3	10.0
Engineering, other	6	18	20	13	12	9	19	25	28	38	5.5	19.6
Sciences, total	5,734	5,955	6,465	6,574	7,130	7,285	7,592	7,870	8,174	8,573	33.4	40.1
Physical sciences, total	619	661	679	770	780	828	878	842	850	927	19.0	24.2
Astronomy, total	17	20	14	19	25	25	30	41	36	46	15.0	22.1
Astronomy	8	13	7	11	12	9	18	21	18	22	16.3	24.2
Astrophysics	9	7	7	8	13	16	12	20	18	24	14.1	20.5
Chemistry, total	499	503	517	579	582	625	661	605	612	695	25.3	31.3
Analytical	63	68	83	95	91	102	109	111	106	146	21.8	38.0
Inorganic	74	60	73	69	59	87	92	68	81	84	28.9	29.3
Medicinal/ pharmaceutical[5]	21	20	27	27	38	26	32	32	43	46	32.8	40.0
Nuclear	0	2	4	1	0	0	3	0	0	1	.0	20.0
Organic	105	104	108	119	131	128	134	118	144	160	20.5	26.8
Physical	87	76	86	109	88	93	93	85	91	77	28.1	27.7
Polymer	15	13	24	12	22	23	28	30	25	40	19.2	32.5
Theoretical	9	14	7	16	16	17	10	14	11	10	19.6	24.4
Chemistry, general	91	128	76	107	112	126	135	119	76	88	29.2	30.8
Chemistry, other	34	18	29	24	25	23	25	28	35	43	34.7	42.6

See explanatory information, if any, and SOURCE at end of table

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Table 2. Science and engineering (S&E) doctorates awarded to women, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Percent women	
											1989	1998
Physics, total	101	130	142	167	169	175	182	193	193	177	8.7	12.9
Acoustics	0	2	2	0	1	2	3	2	4	6	0	33.3
Chemical & atomic/molecular[6]	8	7	4	6	14	17	15	10	11	13	10.8	13.1
Electron[4]	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	-
Elementary particle	10	14	20	12	18	16	7	19	21	11	7.4	6.4
Fluids	1	1	0	1	2	1	0	4	0	0	7.1	0
Nuclear	8	5	7	12	8	9	12	9	11	11	9.9	12.0
Optics	7	5	13	9	14	14	13	20	16	18	9.0	17.3
Plasma & high-temperature[7]	4	2	2	4	4	8	5	2	2	2	6.6	3.6
Polymer	1	3	3	1	5	4	3	12	7	4	14.3	16.7
Solid state & low-temperature[8]	23	35	42	53	42	53	57	54	51	37	7.8	11.8
Physics, general	19	33	31	42	46	30	41	39	36	29	7.1	15.3
Physics, other	20	23	18	27	15	21	26	22	34	46	15.7	16.3
Other physical sciences	2	8	6	5	4	3	5	3	9	9	11.8	37.5
Earth, atmospheric, and ocean sciences, total	148	141	179	188	160	183	170	172	209	219	20.5	26.9
Atmospheric sciences, total	10	14	16	27	18	26	23	22	25	30	11.5	24.0
Atmospheric dynamics	2	4	3	4	5	9	3	4	5	8	12.5	33.3
Atmospheric physics/chemistry	2	1	2	5	2	5	8	7	10	7	13.3	18.4
Meteorology	0	3	7	10	3	8	3	2	3	5	0	20.0
Atmospheric science/meteorology, general	3	5	3	7	7	4	7	5	5	8	21.4	36.4
Atmospheric science/meteorology, other	3	1	1	1	1	0	2	4	2	2	20.0	12.5
Geosciences, total	92	85	124	115	89	95	91	88	118	127	20.2	25.2
Applied geology[4]	0	3	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	-
Geology	35	32	34	35	35	32	38	36	38	40	21.2	23.4
Geochemistry	13	9	19	16	13	10	10	10	15	22	33.3	37.9
Geomorphology/glacial geology	3	1	2	5	3	2	4	1	4	8	30.0	40.0
Geophysics/seismology	11	15	20	23	14	24	19	14	19	21	12.6	19.8
Hydrology/water resources	2	1	2	7	9	3	4	5	8	8	8.3	22.9
Mineralogy/petrology	5	4	15	6	1	6	4	11	6	5	13.9	35.7
Paleontology	4	2	7	2	5	2	3	4	11	7	23.5	30.4
Stratigraphy/sedimentation	6	5	8	10	5	4	1	3	7	4	25.0	16.7
Geological & related sciences, general	2	5	9	4	2	1	4	2	4	5	10.5	38.5
Geological & related sciences, other	11	8	8	7	2	11	4	2	6	7	39.3	17.5
Oceanography, total	26	31	26	29	35	38	28	39	38	32	23.0	28.6
Marine sciences	6	7	2	11	8	11	8	5	8	3	23.1	16.7
Oceanography	20	24	24	18	27	27	20	34	30	29	23.0	30.9
Other environmental sciences	20	11	13	17	18	24	28	23	28	30	29.4	41.1

See explanatory information, if any, and SOURCE at end of table.

Table 2. Science and engineering (S&E) doctorates awarded to women, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Percent women	
											1989	1998
Mathematical/computer sciences, total	263	268	316	325	402	373	451	370	412	454	17.9	21.6
Mathematics, total	155	158	199	205	264	236	265	231	263	297	18.0	25.2
Algebra	10	6	16	13	28	24	24	18	20	18	20.0	24.0
Analysis/functional analysis	20	15	21	18	23	16	18	15	13	25	19.4	19.2
Applied mathematics	28	34	27	44	43	39	47	52	55	61	17.7	23.0
Computing theory	1	1	3	0	3	2	2	2	1	3	8.3	16.7
Geometry	7	8	5	6	7	4	8	14	13	15	14.9	27.8
Logic	5	3	1	2	4	6	7	1	5	5	41.7	31.3
Mathematical statistics[9]	38	31	56	46	57	50	54	47	46	62	22.8	30.4
Number theory	5	1	8	4	4	5	9	7	11	7	21.7	15.2
Operations research	4	2	4	6	9	9	5	4	5	6	18.2	35.3
Topology	8	11	18	16	9	11	8	5	14	13	21.6	20.0
Mathematics, general	17	32	31	37	56	54	64	45	44	39	9.6	23.9
Mathematics, other	12	14	9	13	21	16	19	21	36	43	23.5	34.7
Computer sciences, total	108	110	117	120	138	137	186	139	149	157	17.6	17.0
Computer science	69	85	96	91	123	118	160	116	131	118	13.3	14.4
Information science/ systems	39	25	21	29	15	19	26	23	18	39	41.9	36.8
Biological/agricultural sciences, total	1,769	1,861	1,982	2,064	2,278	2,357	2,446	2,697	2,749	2,830	34.0	41.1
Biological sciences, total	1,542	1,615	1,773	1,831	2,050	2,108	2,218	2,415	2,491	2,533	37.5	43.3
Bacteriology	2	4	5	5	6	11	6	8	1	4	18.2	30.8
Biochemistry	268	237	289	284	318	320	341	317	364	349	40.1	43.7
Biomedical sciences[10]	N/A	N/A	N/A	N/A	N/A	N/A	42	54	63	79	-	42.9
Biophysics	21	23	26	33	21	33	46	41	41	47	24.1	28.3
Biotechnology research[11]	N/A	N/A	N/A	N/A	4	2	2	1	3	4	-	33.3
Plant genetics	3	7	5	8	12	5	12	16	11	18	16.7	45.0
Plant pathology	8	12	13	10	15	11	10	13	8	8	36.4	44.4
Plant physiology	15	19	19	16	19	21	21	29	18	28	31.9	45.9
Botany, other	52	33	39	45	43	46	34	44	31	55	44.4	48.7
Anatomy	27	29	31	31	34	29	25	20	19	8	33.7	22.9
Biometrics/biostatistics	20	18	29	24	21	33	23	34	43	39	43.5	52.0
Cell biology	57	69	63	80	116	102	117	107	113	154	42.9	51.5
Developmental biology/ embryology[12]	4	12	20	22	25	32	30	49	61	61	40.0	48.0
Ecology	36	52	60	65	67	70	64	84	108	114	22.4	39.0
Endocrinology	10	11	16	12	12	8	6	13	9	14	47.6	46.7
Entomology	23	26	35	35	28	28	27	36	41	37	16.5	26.8
Biological immunology[13]	61	72	76	83	73	74	82	129	93	115	40.1	46.9
Microbiology	124	116	150	157	183	177	188	185	184	169	36.5	44.0
Molecular biology	153	152	182	194	237	268	265	291	330	324	37.0	43.7
Neuroscience	63	76	88	92	110	129	121	165	189	168	34.8	40.8
Nutritional sciences	91	88	70	95	99	102	92	98	92	95	71.1	69.3
Parasitology	5	4	7	8	7	9	7	12	10	6	25.0	40.0
Toxicology	39	36	30	33	43	50	50	60	80	61	35.1	39.1
Human/animal genetics	57	73	71	61	76	87	92	101	103	91	50.9	46.4
Human/animal pathology	41	32	46	41	45	45	38	52	42	35	39.0	38.5
Human/animal pharmacology	99	92	91	92	121	106	129	142	143	121	40.9	47.3
Human/animal physiology	105	98	107	82	100	106	103	107	82	100	38.6	38.8
Zoology, other	35	37	39	45	32	32	50	31	34	43	26.5	38.7
Biological sciences, general	77	140	113	115	113	117	148	120	86	82	33.3	37.8
Biological sciences, other	46	47	53	63	70	55	47	56	89	104	39.7	45.6

See explanatory information, if any, and SOURCE at end of table.

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Table 2. Science and engineering (S&E) doctorates awarded to women, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Percent women	
											1989	1998
Agricultural sciences, total	227	246	209	233	228	249	228	282	258	297	20.9	28.7
Agronomy & crop science[14]	20	21	11	23	19	17	13	17	10	18	14.3	18.8
Animal breeding/genetics	3	3	2	6	4	3	1	3	4	6	13.0	33.3
Animal nutrition	15	13	10	8	7	10	9	11	13	13	22.4	28.9
Dairy science	1	2	4	2	2	1	3	2	5	2	6.3	20.0
Poultry science	2	3	1	6	6	5	0	3	2	3	18.2	27.3
Animal sciences, other	25	11	20	21	19	25	19	26	13	16	26.3	26.7
Fisheries science & management[15]	5	6	4	1	4	11	9	10	5	8	14.7	26.7
Wildlife/range management[16]	10	6	8	7	7	13	8	22	13	14	19.2	25.5
Food sciences[17]	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	.0	-
Food engineering[17]	1	2	2	2	2	2	0	0	3	3	9.1	23.1
Food sciences, other[17]	53	54	46	60	57	69	54	69	79	66	36.1	43.1
Forest biology[18]	3	8	3	8	7	6	5	4	1	6	13.6	30.0
Forest engineering[18]	0	0	1	0	0	N/A	0	0	2	0	.0	.0
Forest management[18]	2	1	4	1	0	2	6	2	4	9	9.5	33.3
Wood science & pulp/paper technology[18]	0	0	2	2	3	6	6	3	2	4	0	16.0
Conservation/renewable natural resources[18]	1	3	3	1	4	6	5	3	7	11	8.3	44.0
Forestry & related sciences, other[18]	8	10	5	9	9	6	13	18	15	16	14.0	23.2
Horticulture science	19	27	19	16	15	14	22	22	16	13	25.3	21.7
Plant breeding/genetics	13	20	10	12	14	13	15	13	9	14	20.3	20.3
Plant pathology	24	25	26	20	15	20	9	27	26	24	38.1	36.4
Plant protection-pest management[19]	0	1	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	.0	-
Plant sciences, other	4	4	4	6	9	9	3	3	7	14	26.7	37.8
Soil chemistry/ microbiology[20]	7	6	6	3	5	4	5	9	9	7	25.0	25.9
Soil sciences, other[20]	7	8	11	12	4	6	18	14	8	21	9.3	28.4
Agricultural sciences, general	2	0	1	2	2	0	3	0	1	1	28.6	12.5
Agricultural sciences, other	2	12	6	5	4	1	2	1	4	8	7.4	22.9

See explanatory information, if any, and SOURCE at end of table.

Table 2. Science and engineering (S&E) doctorates awarded to women, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Percent women	
											1989	1998
Psychology, total	1,800	1,913	1,996	1,928	2,088	2,101	2,180	2,328	2,369	2,460	56.1	66.8
Clinical	710	785	848	810	873	842	870	919	903	969	56.4	71.8
Cognitive psychology & psycholinguistics[21]	33	35	46	47	48	56	52	60	75	50	41.8	44.2
Comparative	1	3	5	2	3	7	1	2	3	4	12.5	66.7
Counseling	284	281	306	289	284	310	297	303	313	295	56.7	65.8
Developmental & child[22]	116	112	119	131	155	132	121	154	170	207	78.4	77.5
Educational	60	69	64	69	67	39	53	66	45	39	57.1	63.9
Experimental	70	49	64	73	68	71	83	68	70	65	47.9	43.6
Family & marriage counseling[10]	N/A	N/A	N/A	N/A	N/A	N/A	37	28	43	28	-	54.9
Human/indiv. & family dev.[23]	N/A	N/A	N/A	N/A	N/A	103	118	121	101	90	-	76.3
Industrial/organizational	49	53	76	64	73	69	89	99	103	110	47.1	58.2
Physiological/ psychobiology[24]	33	28	21	25	50	52	35	41	42	49	53.2	53.3
Quantitative	6	3	2	5	11	8	9	7	10	8	54.5	53.3
Personality	17	10	4	8	12	12	9	11	12	15	60.7	62.5
Psychometrics	3	4	3	2	2	1	4	3	7	4	50.0	50.0
School	69	53	57	59	65	53	62	71	66	81	64.5	76.4
Social	68	92	86	78	67	100	84	111	116	117	53.1	62.9
Psychology, general	204	233	185	168	185	158	185	180	198	205	56.0	67.9
Psychology, other	77	103	110	98	125	191	189	205	92	124	50.7	63.3
Social sciences, total	1,135	1,111	1,313	1,299	1,422	1,443	1,467	1,461	1,585	1,683	34.1	41.6
Economics, total	198	200	217	219	246	249	279	263	267	311	18.6	27.0
Agricultural economics	25	27	38	28	31	20	42	37	34	40	15.2	25.8
Econometrics	2	3	5	2	7	4	4	8	4	4	7.7	16.0
Economics	171	170	174	189	208	225	233	218	229	267	19.6	27.4
Political science, total	201	170	211	235	246	282	266	305	295	365	28.7	38.0
International relations & affairs[25]	29	15	24	24	28	24	21	32	19	33	30.9	34.0
Political science/ government	107	108	117	142	129	173	167	186	195	243	24.9	36.7
Public administration	37	22	32	30	41	47	43	37	30	48	38.1	45.7
Public policy analysis[26]	28	25	38	39	48	38	35	50	51	41	35.4	42.3
Sociology, total	232	218	246	250	255	283	294	276	331	317	50.7	54.7
Demography/population studies[27]	10	11	16	5	12	12	6	2	16	13	45.5	41.9
Sociology	222	207	230	245	243	271	288	274	315	304	50.9	55.4
Other social sciences, total	504	523	639	595	675	629	628	617	692	690	45.7	50.9
American studies	48	37	56	47	57	48	53	67	46	52	63.2	52.0
Anthropology	148	173	210	155	213	208	219	214	240	239	45.5	56.2
Archaeology	14	12	20	17	18	17	18	11	20	23	53.8	67.6
Area studies	5	9	5	11	11	17	12	9	5	11	29.4	78.6
Criminology	10	16	18	15	15	12	23	25	25	22	31.3	40.0
Geography	25	35	33	29	40	35	43	45	54	49	23.8	31.8
History/philosophy of science & technology[28]	9	9	11	8	16	10	18	10	13	19	45.0	44.2
Linguistics	106	90	112	133	118	134	102	113	135	123	56.4	56.2
Statistics	20	12	10	11	14	16	11	7	23	21	29.0	35.0
Urban affairs & studies[29]	23	21	22	31	44	43	37	38	29	26	37.1	34.7
Social sciences, general	9	9	17	20	13	9	23	15	14	17	34.6	56.7
Social sciences, other	87	100	125	118	116	80	69	63	88	88	55.1	59.9

See explanatory information, if any, and SOURCE at end of table.

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Table 2. Science and engineering (S&E) doctorates awarded to women, by field of study and year of doctorate: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Percent women	
											1989	1998
Non-S&E, total[30]	6,404	6,736	6,941	7,356	7,470	7,899	8,126	8,299	8,330	8,514	50.8	55.2
Health	629	592	668	710	777	843	843	861	936	1,006	64.6	67.1
Humanities[31]	1,436	1,600	1,720	1,858	1,919	2,054	2,254	2,343	2,377	2,458	44.3	48.2
Education	3,610	3,752	3,748	3,976	3,921	4,089	4,092	4,179	4,103	4,120	57.5	62.8
Professional/other	729	792	805	812	853	913	937	916	914	930	34.7	41.4
Grand total, all fields	12,513	13,106	13,873	14,436	15,122	15,819	16,414	16,945	17,251	17,856	36.5	41.8

1 In 1993 this subfield was changed from "Polymer engineering" to "Polymer and plastics engineering."

2 In 1993 this subfield was changed from "Industrial engineering" to "Industrial and manufacturing engineering."

3 In 1993 this subfield was changed from "Ceramic engineering" to "Ceramic sciences engineering."

4 These subfields were deleted in 1991: "Naval architecture/marine engineering," "Electron physics," and "Applied geology."

5 In 1993 this subfield was changed from "Pharmaceutical chemistry" to "Medicinal and pharmaceutical chemistry."

6 In 1993 this subfield was changed from "Atomic/molecular physics" to "Chemical and atomic/molecular physics."

7 In 1993 this subfield was changed from "Plasma physics" to "Plasma and high-temperature physics."

8 In 1993 this subfield was changed from "Solid state physics" to "Solid state and low-temperature physics."

9 In 1993 this subfield was changed from "Math probability and statistics" to "Mathematical statistics."

10 These subfields were introduced in 1995: "Biomedical sciences" and "Family and marriage counseling."

11 "Biotechnology research" was introduced in 1993.

12 In 1990 this subfield was changed from "Embryology" to "Developmental biology/embryology."

13 In 1993 this subfield was changed from "Immunology" to "Biological immunology."

14 In 1993 this subfield was changed from "Agronomy" to "Agronomy and crop science."

15 In 1993 this subfield was changed from "Fisheries science" to "Fisheries science and management."

16 In 1988 this subfield was changed from "Wildlife management" to "Wildlife/range management."

17 In 1990 "Food sciences" was separated into "Food engineering" and "Food sciences, other."

18 In 1988 "Forestry science" was separated into "Forest biology," "Forest engineering," "Forest management," "Wood science," "Renewable natural resources," and "Forestry and related sciences, other." In 1993 "Pulp and paper technology" was added to "Wood science," and "Conservation" was added to "Renewable natural resources." "Forest engineering" was deleted from the survey in 1994 and reintroduced in 1995.

19 "Plant protection-pest management" was deleted in 1991.

20 In 1988 "Soil sciences" was separated into "Soil chemistry/microbiology" and "Soil sciences, other."

21 In 1993 this subfield was changed from "Cognitive psychology" to "Cognitive psychology and psycholinguistics."

22 In 1993 this subfield was changed from "Developmental psychology" to "Developmental and child psychology."

23 "Human/individual & family development" was introduced in 1994.

24 In 1993 this subfield was changed from "Physiological psychology" to "Physiological psychology/psychobiology."

25 In 1993 this subfield was changed from "International relations" to "International relations and affairs."

26 In 1993 this subfield was changed from "Public policy studies" to "Public policy analysis."

27 In 1993 this subfield was changed from "Demography" to "Demography and population studies."

28 In 1993 this subfield was changed from "History of science" to "History and philosophy of science and technology."

29 In 1993 this subfield was changed from "Urban studies" to "Urban affairs and studies."

30 Non-S&E doctorates include those whose field of specialization is unknown.

31 Categories differ from those published by other Federal sponsors and the Summary Reports in that linguistics, history of science, American studies, and archaeology are included not in humanities but in social science.

KEY: - = Percent not available as data were not collected that year.
N/A = Not available (i.e., the subfield was not identified separately in the questionnaire for that year)

SOURCE: National Science Foundation/Science Resources Studies, Survey of Earned Doctorates

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents									
Science and engineering, total	14,592	15,364	15,914	15,942	16,573	18,187	18,996	18,628	18,250	18,125
Engineering, total	2,229	2,346	2,474	2,520	2,697	3,053	3,342	3,383	3,303	3,021
Chemical	444	392	399	378	377	380	381	392	408	372
Civil	247	241	213	215	227	292	309	305	326	293
Electrical	539	599	686	719	795	899	971	926	933	797
Mechanical	325	368	359	426	434	538	563	588	533	512
Other engineering	674	746	817	782	864	944	1,118	1,172	1,103	1,047
Sciences, total	12,363	13,018	13,440	13,422	13,876	15,134	15,654	15,245	14,947	15,104
Physical sciences, total	2,131	2,341	2,300	2,357	2,330	2,789	2,841	2,568	2,488	2,435
Astronomy	82	96	86	106	111	112	141	149	157	148
Chemistry	1,383	1,497	1,461	1,441	1,400	1,616	1,624	1,461	1,434	1,455
Physics	654	725	739	790	806	1,044	1,059	948	880	814
Other physical sciences	12	23	14	20	13	17	17	10	17	18
Earth, atmospheric, & ocean sciences	547	535	618	541	504	613	594	558	594	559
Mathematics	428	422	518	507	590	657	771	646	619	666
Computer sciences	396	403	451	489	509	543	616	513	513	551
Biological sciences	3,300	3,380	3,525	3,568	3,752	4,088	4,329	4,365	4,234	4,279
Agricultural sciences	651	687	620	573	506	616	598	576	549	540
Psychology	2,737	2,992	3,018	2,986	3,161	3,136	3,184	3,226	3,108	3,259
Social sciences	2,173	2,258	2,390	2,401	2,524	2,692	2,721	2,793	2,842	2,815
Non-S&E, total	10,435	11,239	11,516	12,048	12,135	12,707	13,063	12,878	12,612	12,789
Health	756	756	839	855	939	1,050	1,045	1,016	1,018	1,116
Humanities[1]	2,716	3,082	3,194	3,440	3,512	3,766	4,055	4,045	4,196	4,288
Education	5,410	5,787	5,788	6,017	5,968	6,063	5,995	6,062	5,712	5,700
Professional/other	1,553	1,614	1,695	1,736	1,716	1,828	1,968	1,755	1,686	1,685
Grand total, all fields	25,027	26,603	27,430	27,990	28,708	30,894	32,059	31,506	30,862	30,914
	U.S. citizens and permanent residents, American Indian/Alaskan Native									
Science and engineering, total	53	43	56	69	43	64	69	96	79	96
Engineering, total	7	4	6	11	2	6	10	14	16	13
Chemical	1	0	1	1	1	1	2	1	4	3
Civil	1	2	1	1	0	0	0	2	2	0
Electrical	0	0	2	4	0	1	2	2	4	3
Mechanical	0	0	1	1	0	0	2	3	6	2
Other engineering	5	2	1	4	1	4	4	6	0	5
Sciences, total	46	39	50	58	41	58	59	82	63	83
Physical sciences, total	10	3	10	12	5	6	9	6	9	10
Astronomy	2	0	0	0	1	0	0	0	1	1
Chemistry	5	3	9	6	2	4	7	4	6	7
Physics	3	0	1	6	2	2	2	2	2	2
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	6	1	3	1	4	1	0	2	2	3
Mathematics	0	1	0	2	1	2	2	1	1	3
Computer sciences	2	0	1	2	1	1	0	4	1	3
Biological sciences	7	4	10	13	7	16	15	21	9	12
Agricultural sciences	2	4	4	0	1	1	2	5	5	9
Psychology	11	19	13	15	15	12	14	18	18	31
Social sciences	8	7	9	13	7	19	17	25	18	12
Non-S&E, total	41	54	76	80	77	79	80	91	87	93
Health	3	1	5	5	6	6	9	4	6	4
Humanities[1]	7	6	10	18	10	20	18	18	19	21
Education	25	37	56	50	51	37	41	60	51	50
Professional/other	6	10	5	7	10	16	12	9	11	18
Grand total, all fields	94	97	132	149	120	143	149	187	166	189

See explanatory information, if any, and SOURCE at end of table.

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Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, Asian/Pacific Islander									
Science and engineering, total	986	1,009	1,180	1,345	1,610	2,989	3,671	3,091	2,533	2,140
Engineering, total	361	359	405	451	527	867	1,033	895	707	555
Chemical	77	51	50	54	62	96	101	81	73	65
Civil	36	28	30	34	41	69	91	89	72	38
Electrical	93	115	140	175	199	304	322	275	257	206
Mechanical	66	69	62	78	93	179	190	166	110	90
Other engineering	89	96	123	110	132	219	329	284	195	156
Sciences, total	625	650	775	894	1,083	2,122	2,638	2,196	1,826	1,585
Physical sciences, total	156	164	172	227	265	600	751	504	403	332
Astronomy	2	5	0	4	4	10	22	12	8	13
Chemistry	96	99	122	135	157	332	416	296	235	207
Physics	57	58	50	88	103	255	312	195	159	111
Other physical sciences	1	2	0	0	1	3	1	1	1	1
Earth, atmospheric, & ocean sciences	23	15	17	27	22	89	104	77	72	50
Mathematics	24	27	57	52	79	142	208	140	99	71
Computer sciences	52	48	66	86	77	117	137	111	106	91
Biological sciences	201	200	261	269	370	720	925	888	719	658
Agricultural sciences	23	32	24	37	29	72	78	81	63	47
Psychology	55	53	59	59	73	109	122	124	126	114
Social sciences	91	111	119	137	168	273	313	271	238	222
Non-S&E, total	282	297	351	419	407	557	638	606	577	580
Health	22	39	44	52	45	94	94	89	87	84
Humanities[1]	79	62	81	99	108	151	193	191	177	195
Education	102	104	130	144	144	173	177	185	179	180
Professional/other	79	92	96	124	110	139	174	141	134	121
Grand total, all fields	1,268	1,306	1,531	1,764	2,017	3,546	4,309	3,697	3,110	2,720
	U.S. citizens and permanent residents, black									
Science and engineering, total	367	374	464	408	469	500	560	576	616	639
Engineering, total	33	40	55	49	50	54	71	74	97	84
Chemical	5	10	8	13	6	8	3	12	16	3
Civil	5	1	12	3	5	8	11	8	10	10
Electrical	9	8	16	17	15	17	24	22	31	23
Mechanical	5	5	3	5	3	7	14	10	12	14
Other engineering	9	16	16	11	21	14	19	22	28	34
Sciences, total	334	334	409	359	419	446	489	502	519	555
Physical sciences, total	31	30	32	25	41	46	43	60	51	54
Astronomy	0	1	0	1	2	0	1	0	2	1
Chemistry	26	24	23	17	31	34	33	45	34	43
Physics	5	5	9	6	7	11	9	15	15	10
Other physical sciences	0	0	0	1	1	1	0	0	0	0
Earth, atmospheric, & ocean sciences	4	3	3	6	4	6	3	4	9	9
Mathematics	8	4	11	4	8	11	5	8	7	16
Computer sciences	1	1	8	5	6	10	11	12	4	14
Biological sciences	57	51	64	62	75	79	108	98	111	108
Agricultural sciences	14	15	17	14	16	22	17	25	25	19
Psychology	97	115	130	106	119	124	151	154	155	155
Social sciences	122	115	144	137	150	148	151	141	157	180
Non-S&E, total	596	676	702	708	811	779	917	881	859	947
Health	29	32	40	38	59	46	60	49	55	62
Humanities[1]	71	72	92	90	98	106	114	119	137	139
Education	432	496	472	501	557	521	629	609	556	646
Professional/other	64	76	98	79	97	106	114	104	111	100
Grand total, all fields	963	1,050	1,166	1,116	1,280	1,279	1,477	1,457	1,475	1,586

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, Hispanic									
Science and engineering, total	382	468	492	513	542	548	571	623	693	752
Engineering, total	47	54	60	71	66	66	77	98	97	110
Chemical	9	8	11	16	10	7	13	19	7	13
Civil	8	9	5	7	12	14	11	6	12	16
Electrical	14	13	15	17	17	21	15	26	26	31
Mechanical	3	5	9	11	5	8	8	13	15	19
Other engineering	13	19	20	20	22	16	30	34	37	31
Sciences, total	335	414	432	442	476	482	494	525	556	642
Physical sciences, total	59	72	65	72	79	90	73	66	68	54
Astronomy	2	2	1	4	2	2	4	2	3	2
Chemistry	43	57	46	42	51	59	43	35	43	34
Physics	14	13	18	26	26	29	26	29	22	18
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	9	13	16	16	13	8	13	19	15	16
Mathematics	11	10	9	12	16	13	15	10	18	27
Computer sciences	4	5	12	8	7	7	6	16	17	14
Biological sciences	71	89	95	102	114	131	127	131	146	169
Agricultural sciences	18	23	15	18	20	25	21	13	26	35
Psychology	93	109	122	133	131	133	145	173	169	207
Social sciences	70	93	98	81	96	75	94	97	97	120
Non-S&E, total	312	369	375	396	431	482	490	482	530	559
Health	11	17	16	13	24	25	30	38	32	36
Humanities[1]	100	127	136	129	145	168	153	174	203	192
Education	171	190	189	214	222	241	258	217	253	282
Professional/other	30	35	34	40	40	48	49	53	42	49
Grand total, all fields	694	837	867	909	973	1,030	1,061	1,105	1,183	1,311
	U.S. citizens and permanent residents, Puerto Rican									
Science and engineering, total	93	115	99	120	112	131	137	142	172	171
Engineering, total	7	6	9	13	10	10	13	22	23	17
Chemical	1	2	2	3	2	2	4	4	1	3
Civil	1	1	1	1	1	1	1	1	5	1
Electrical	1	2	0	3	5	3	3	4	4	3
Mechanical	3	0	2	1	1	1	1	3	6	5
Other engineering	1	1	4	5	1	3	4	10	7	5
Sciences, total	86	109	90	107	102	121	124	120	149	154
Physical sciences, total	20	24	17	20	17	26	21	12	20	11
Astronomy	1	1	0	1	0	0	1	0	0	1
Chemistry	16	20	14	14	14	19	17	9	13	9
Physics	3	3	3	5	3	7	3	3	7	1
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	0	5	0	3	1	0	2	3	5	5
Mathematics	4	2	0	2	1	1	1	3	4	7
Computer sciences	0	2	3	1	1	4	0	5	6	2
Biological sciences	18	24	23	27	27	28	30	32	37	43
Agricultural sciences	7	5	0	3	10	5	3	4	4	3
Psychology	21	26	20	35	24	43	44	48	57	69
Social sciences	16	21	27	16	21	14	23	13	16	14
Non-S&E, total	83	95	92	109	120	126	132	109	139	128
Health	4	6	3	4	3	6	12	7	10	7
Humanities[1]	22	28	30	22	36	38	30	38	49	36
Education	52	56	52	76	70	68	69	51	70	71
Professional/other	5	5	7	7	11	14	21	13	10	14
Grand total, all fields	176	210	191	229	232	257	269	251	311	299

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, Mexican American									
Science and engineering, total	95	104	126	120	122	145	150	149	159	223
Engineering, total	14	13	14	10	12	15	19	28	19	30
Chemical	4	2	4	1	1	1	3	4	3	1
Civil	1	2	2	2	0	2	7	2	2	5
Electrical	3	4	3	3	2	4	3	9	5	7
Mechanical	0	3	3	2	0	2	2	4	3	3
Other engineering	6	2	2	2	9	6	4	9	6	14
Sciences, total	81	91	112	110	110	130	131	121	140	193
Physical sciences, total	11	11	15	9	12	24	13	23	15	21
Astronomy	0	0	0	0	0	1	1	1	0	1
Chemistry	10	11	12	6	8	19	8	15	9	15
Physics	1	0	3	3	4	4	4	7	6	5
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	2	3	4	7	2	4	4	5	3	5
Mathematics	2	3	3	4	4	4	6	2	3	6
Computer sciences	0	0	0	3	1	2	3	1	2	3
Biological sciences	12	22	26	24	24	30	28	28	42	54
Agricultural sciences	6	8	5	5	4	6	4	2	2	10
Psychology	31	25	35	37	42	40	48	38	48	53
Social sciences	17	19	24	21	21	20	25	22	25	41
Non-S&E, total	83	86	106	99	130	163	140	144	141	198
Health	5	7	3	5	8	5	8	6	7	15
Humanities[1]	22	19	27	24	35	42	34	41	35	57
Education	50	50	67	58	74	102	93	79	90	114
Professional/other	6	10	9	12	13	14	5	18	9	12
Grand total, all fields	178	190	232	219	252	308	290	293	300	421
	U.S. citizens and permanent residents, other Hispanic									
Science and engineering, total	194	249	267	273	308	272	284	332	322	358
Engineering, total	26	35	37	48	44	41	45	48	55	63
Chemical	4	4	5	12	7	4	6	11	3	9
Civil	6	6	2	4	11	11	3	3	5	10
Electrical	10	7	12	11	10	14	9	13	17	21
Mechanical	0	2	4	8	4	5	5	6	6	11
Other engineering	6	16	14	13	12	7	22	15	24	12
Sciences, total	168	214	230	225	264	231	239	284	267	295
Physical sciences, total	28	37	33	43	50	40	39	31	33	22
Astronomy	1	1	1	3	2	1	2	1	3	0
Chemistry	17	26	20	22	29	21	18	11	21	10
Physics	10	10	12	18	19	18	19	19	9	12
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	7	5	12	6	10	4	7	11	7	6
Mathematics	5	5	6	6	11	8	8	5	11	14
Computer sciences	4	3	9	4	5	1	3	10	9	9
Biological sciences	41	43	46	51	63	73	69	71	67	72
Agricultural sciences	5	10	10	10	6	14	14	7	20	22
Psychology	41	58	67	61	65	50	53	87	64	85
Social sciences	37	53	47	44	54	41	46	62	56	65
Non-S&E, total	146	188	177	188	181	193	218	229	250	233
Health	2	4	10	4	13	14	10	25	15	14
Humanities[1]	56	80	79	83	74	88	89	95	119	99
Education	69	84	70	80	78	71	96	87	93	97
Professional/other	19	20	18	21	16	20	23	22	23	23
Grand total, all fields	340	437	444	461	489	465	502	561	572	591

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, white									
Science and engineering, total	12,501	13,170	13,323	13,326	13,737	13,889	13,902	13,999	13,717	13,929
Engineering, total	1,726	1,840	1,837	1,880	2,025	2,020	2,090	2,260	2,267	2,160
Chemical	345	318	322	284	295	259	256	274	291	276
Civil	191	196	159	166	168	199	194	199	219	216
Electrical	405	450	478	487	553	548	588	588	573	519
Mechanical	241	286	266	326	328	337	338	392	374	368
Other engineering	544	590	612	617	681	677	714	807	810	781
Sciences, total	10,775	11,330	11,486	11,446	11,712	11,869	11,812	11,739	11,450	11,769
Physical sciences, total	1,828	2,008	1,968	1,973	1,911	2,025	1,922	1,888	1,875	1,907
Astronomy	74	86	83	95	100	97	111	131	131	121
Chemistry	1,188	1,284	1,239	1,219	1,145	1,179	1,111	1,063	1,073	1,123
Physics	555	618	633	641	656	736	686	685	655	647
Other physical sciences	11	20	13	18	10	13	14	9	16	16
Earth, atmospheric, & ocean sciences	498	494	557	485	455	504	464	449	477	462
Mathematics	369	372	419	425	476	479	535	478	473	522
Computer sciences	319	339	355	378	410	401	453	356	357	406
Biological sciences	2,904	2,975	3,041	3,068	3,146	3,107	3,119	3,171	3,140	3,226
Agricultural sciences	570	601	545	493	438	487	473	444	412	417
Psychology	2,453	2,648	2,652	2,636	2,807	2,730	2,727	2,741	2,501	2,630
Social sciences	1,834	1,893	1,949	1,988	2,069	2,136	2,119	2,212	2,215	2,199
Non-S&E, total	9,069	9,708	9,862	10,299	10,315	10,705	10,817	10,686	10,096	10,224
Health	684	662	720	735	800	867	835	822	821	903
Humanities[1]	2,399	2,766	2,821	3,061	3,109	3,283	3,523	3,494	3,513	3,588
Education	4,634	4,900	4,889	5,051	4,965	5,044	4,853	4,940	4,429	4,390
Professional/other	1,352	1,380	1,432	1,452	1,441	1,511	1,606	1,430	1,333	1,343
Grand total, all fields	21,570	22,878	23,185	23,625	24,052	24,594	24,719	24,685	23,813	24,153
	U.S. citizens and permanent residents, male									
Science and engineering, total	9,671	10,182	10,317	10,365	10,549	11,693	12,083	11,668	11,312	11,001
Engineering, total	1,954	2,070	2,158	2,192	2,349	2,605	2,822	2,860	2,794	2,574
Chemical	375	330	339	296	313	302	293	294	331	296
Civil	207	207	188	192	195	237	257	258	268	236
Electrical	503	552	638	652	715	811	851	821	827	706
Mechanical	306	344	322	401	398	484	514	528	478	462
Other engineering	563	637	671	651	728	771	907	959	890	874
Sciences, total	7,717	8,112	8,159	8,173	8,200	9,088	9,261	8,808	8,518	8,427
Physical sciences, total	1,694	1,871	1,846	1,843	1,809	2,164	2,133	1,958	1,903	1,836
Astronomy	69	78	79	91	88	91	116	114	131	120
Chemistry	1,018	1,114	1,093	1,040	999	1,152	1,087	1,022	1,005	997
Physics	596	663	663	696	712	907	916	814	756	708
Other physical sciences	11	16	11	16	10	14	14	8	11	11
Earth, atmospheric, & ocean sciences	427	417	461	394	384	469	450	428	434	390
Mathematics	327	329	406	390	426	506	588	501	447	469
Computer sciences	312	313	357	406	400	449	473	422	414	431
Biological sciences	2,024	2,068	2,135	2,130	2,168	2,345	2,469	2,424	2,325	2,370
Agricultural sciences	487	528	483	423	372	456	463	401	393	359
Psychology	1,174	1,220	1,128	1,206	1,223	1,169	1,128	1,043	1,015	1,055
Social sciences	1,272	1,366	1,343	1,381	1,418	1,530	1,557	1,631	1,587	1,517
Non-S&E, total	4,864	5,173	5,295	5,447	5,439	5,679	5,793	5,515	5,464	5,443
Health	225	239	252	226	260	328	325	292	283	299
Humanities[1]	1,473	1,660	1,703	1,832	1,815	1,978	2,077	2,000	2,182	2,206
Education	2,221	2,358	2,347	2,347	2,378	2,307	2,243	2,238	2,043	2,047
Professional/other	945	916	993	1,042	986	1,066	1,148	985	956	891
Grand total, all fields	14,535	15,355	15,612	15,812	15,988	17,372	17,876	17,183	16,776	16,444

See explanatory information, if any, and SOURCE at end of table.

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Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, male, American Indian/Alaskan Native									
Science and engineering, total	33	25	37	42	25	40	44	62	44	54
Engineering, total	5	4	4	8	2	4	10	12	13	9
Chemical	1	0	0	1	1	1	2	1	3	0
Civil	0	2	1	0	0	0	0	1	1	0
Electrical	0	0	1	3	0	1	2	1	4	3
Mechanical	0	0	1	1	0	0	2	3	5	2
Other engineering	4	2	1	3	1	2	4	6	0	4
Sciences, total	28	21	33	34	23	36	34	50	31	45
Physical sciences, total	10	3	8	10	3	5	6	5	9	9
Astronomy	2	0	0	0	1	0	0	0	1	1
Chemistry	5	3	7	4	1	4	4	3	6	6
Physics	3	0	1	6	1	1	2	2	2	2
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	4	0	2	1	4	1	0	2	1	2
Mathematics	0	1	0	1	1	2	1	1	1	1
Computer sciences	1	0	1	2	0	0	0	2	0	3
Biological sciences	4	3	6	8	5	11	10	12	5	6
Agricultural sciences	1	4	4	0	1	1	2	2	5	7
Psychology	3	6	5	6	6	5	6	9	6	13
Social sciences	5	4	7	6	3	11	9	17	4	4
Non-S&E, total	16	27	37	40	35	31	38	40	33	50
Health	0	1	3	3	0	1	2	1	2	1
Humanities[1]	2	4	3	12	7	12	10	9	8	14
Education	10	16	29	20	21	10	17	22	18	26
Professional/other	4	6	2	5	7	8	9	8	5	9
Grand total, all fields	49	52	74	82	60	71	82	102	77	104
	U.S. citizens and permanent residents, male, Asian/Pacific Islander									
Science and engineering, total	745	757	806	927	1,079	2,169	2,557	2,108	1,640	1,376
Engineering, total	327	326	356	390	466	748	863	762	589	457
Chemical	66	40	41	38	55	71	76	63	61	46
Civil	33	25	26	32	39	65	77	75	58	32
Electrical	85	109	135	154	174	273	276	246	218	175
Mechanical	65	66	59	74	90	155	167	149	94	79
Other engineering	78	86	95	92	108	184	267	229	158	125
Sciences, total	418	431	450	537	613	1,421	1,694	1,346	1,051	919
Physical sciences, total	120	122	124	147	168	422	540	359	270	231
Astronomy	0	3	0	2	2	9	18	8	7	10
Chemistry	73	70	86	79	85	203	270	188	142	135
Physics	46	47	38	66	80	208	251	162	121	85
Other physical sciences	1	2	0	0	1	2	1	1	0	1
Earth, atmospheric, & ocean sciences	19	14	11	19	14	72	76	65	52	31
Mathematics	21	20	39	33	43	116	158	104	71	44
Computer sciences	42	41	51	74	58	101	107	95	80	68
Biological sciences	112	113	132	136	198	451	515	480	370	367
Agricultural sciences	17	26	16	25	20	52	62	51	45	29
Psychology	28	22	15	20	22	32	44	31	32	28
Social sciences	59	73	62	83	90	175	192	161	131	121
Non-S&E, total	160	152	166	209	208	300	312	290	244	261
Health	13	17	21	22	22	48	52	47	37	34
Humanities[1]	42	28	39	48	42	84	83	86	71	81
Education	43	39	45	48	58	66	59	71	51	72
Professional/other	62	68	61	91	86	102	118	86	85	74
Grand total, all fields	905	909	972	1,136	1,287	2,469	2,869	2,398	1,884	1,637

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, male, black									
Science and engineering, total	214	225	270	238	261	284	290	323	327	293
Engineering, total	30	34	47	43	39	41	56	55	74	62
Chemical	4	8	7	12	3	4	2	7	10	2
Civil	5	1	10	3	3	6	8	7	10	8
Electrical	9	7	14	15	13	14	20	17	27	19
Mechanical	5	5	2	5	3	6	13	7	11	14
Other engineering	7	13	14	8	17	11	13	17	16	19
Sciences, total	184	191	223	195	222	243	234	268	253	231
Physical sciences, total	24	23	27	19	31	33	25	47	41	25
Astronomy	0	1	0	0	2	0	1	0	1	1
Chemistry	19	17	18	12	22	25	16	35	26	17
Physics	5	5	9	6	7	7	8	12	14	7
Other physical sciences	0	0	0	1	0	1	0	0	0	0
Earth, atmospheric, & ocean sciences	3	1	2	5	4	5	3	2	7	6
Mathematics	5	3	7	4	7	8	4	6	5	9
Computer sciences	0	1	4	4	2	8	7	9	3	6
Biological sciences	33	29	32	38	43	34	65	58	51	40
Agricultural sciences	13	14	16	10	12	16	11	25	19	15
Psychology	36	43	44	28	44	46	39	39	41	43
Social sciences	70	77	91	87	79	93	80	82	86	87
Non-S&E, total	239	254	282	281	318	269	325	318	305	315
Health	9	14	17	14	18	11	18	13	15	13
Humanities[1]	35	37	44	47	56	51	53	53	66	68
Education	162	169	179	174	201	161	204	203	172	191
Professional/other	33	34	42	46	43	46	50	49	52	43
Grand total, all fields	453	479	552	519	579	553	615	641	632	608
	U.S. citizens and permanent residents, male, Hispanic									
Science and engineering, total	227	290	306	308	320	318	339	351	388	426
Engineering, total	39	45	50	56	54	60	66	84	74	97
Chemical	5	7	7	12	7	7	11	13	4	13
Civil	8	7	3	6	10	11	10	6	11	13
Electrical	13	12	15	14	14	21	14	23	20	29
Mechanical	2	4	7	9	5	7	8	13	12	18
Other engineering	11	15	18	15	18	14	23	29	27	24
Sciences, total	188	245	256	252	266	258	273	267	314	329
Physical sciences, total	41	46	54	52	59	69	52	54	53	43
Astronomy	2	2	1	3	2	2	2	1	2	2
Chemistry	26	33	37	26	33	43	29	28	31	25
Physics	13	11	16	23	24	24	21	25	20	16
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	6	9	14	10	11	6	7	13	11	10
Mathematics	7	6	5	9	14	10	11	10	12	20
Computer sciences	1	4	11	7	6	7	2	9	15	13
Biological sciences	50	56	56	59	57	69	80	65	83	89
Agricultural sciences	15	17	12	14	15	13	16	9	19	22
Psychology	30	52	52	55	45	43	48	53	62	55
Social sciences	38	55	52	46	59	41	57	54	59	77
Non-S&E, total	149	159	152	174	197	200	200	213	229	252
Health	4	2	7	4	8	7	15	16	8	11
Humanities[1]	51	52	64	66	72	79	71	84	106	102
Education	73	85	65	82	94	82	91	87	93	111
Professional/other	21	20	16	22	23	32	23	26	22	28
Grand total, all fields	376	449	458	482	517	518	539	564	617	678

See explanatory information, if any, and SOURCE at end of table.

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Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, male, Puerto Rican									
Science and engineering, total	54	67	52	71	70	72	74	74	99	68
Engineering, total	6	4	7	10	8	10	11	17	19	16
Chemical	1	2	1	3	2	2	3	2	1	3
Civil	1	1	1	1	0	1	1	1	5	1
Electrical	1	1	0	2	4	3	3	4	3	3
Mechanical	2	0	2	0	1	1	1	3	6	5
Other engineering	1	0	3	4	1	3	3	7	4	4
Sciences, total	48	63	45	61	62	62	63	57	80	52
Physical sciences, total	16	14	11	14	12	19	12	8	18	6
Astronomy	1	1	0	1	0	0	0	0	0	1
Chemistry	12	10	9	9	9	13	9	6	11	4
Physics	3	3	2	4	3	6	3	2	7	1
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	0	4	0	3	1	0	1	3	4	2
Mathematics	1	2	0	1	1	1	0	3	3	4
Computer sciences	0	2	3	1	0	4	0	4	6	1
Biological sciences	14	14	12	16	16	14	21	14	21	20
Agricultural sciences	5	4	0	3	7	2	3	3	3	2
Psychology	5	11	6	16	13	13	13	15	20	11
Social sciences	7	12	13	7	12	9	13	7	5	6
Non-S&E, total	32	37	32	39	51	51	46	40	54	57
Health	1	0	2	3	0	2	7	2	3	3
Humanities[1]	10	8	11	10	18	16	14	16	26	19
Education	17	26	16	23	25	23	19	17	21	27
Professional/other	4	3	3	3	8	10	6	5	4	8
Grand total, all fields	86	104	84	110	121	123	120	114	153	125
	U.S. citizens and permanent residents, male, Mexican American									
Science and engineering, total	57	67	84	79	73	87	89	95	91	136
Engineering, total	9	11	12	10	10	13	18	25	12	27
Chemical	1	2	3	1	1	1	2	3	2	1
Civil	1	1	2	2	0	2	7	2	1	4
Electrical	2	4	3	3	2	4	3	8	2	7
Mechanical	0	2	2	2	0	2	2	4	3	3
Other engineering	5	2	2	2	7	4	4	8	4	12
Sciences, total	48	56	72	69	63	74	71	70	79	109
Physical sciences, total	9	8	12	7	9	20	9	20	13	18
Astronomy	0	0	0	0	0	1	0	1	0	1
Chemistry	8	8	10	4	6	16	6	13	7	12
Physics	1	0	2	3	3	3	3	6	6	5
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	2	2	4	5	2	4	3	3	2	4
Mathematics	2	1	1	4	3	3	4	2	2	3
Computer sciences	0	0	0	3	1	2	1	1	2	3
Biological sciences	9	15	19	11	13	17	17	16	21	32
Agricultural sciences	6	7	4	4	3	4	3	1	2	7
Psychology	10	11	20	19	16	17	15	18	20	18
Social sciences	10	12	12	16	16	7	19	9	17	24
Non-S&E, total	46	51	48	46	59	74	70	71	69	83
Health	3	1	0	0	3	2	3	2	0	1
Humanities[1]	12	11	14	14	19	23	21	21	22	33
Education	26	31	28	26	30	38	42	38	42	44
Professional/other	5	8	6	6	7	11	4	10	5	5
Grand total, all fields	103	118	132	125	132	161	159	166	160	219

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, male, other Hispanic									
Science and engineering, total	116	156	170	158	177	159	176	182	198	222
Engineering, total	24	30	31	36	36	37	37	42	43	54
Chemical	3	3	3	8	4	4	6	8	1	9
Civil	6	5	0	3	10	8	2	3	5	8
Electrical	10	7	12	9	8	14	8	11	15	19
Mechanical	0	2	3	7	4	4	5	6	3	10
Other engineering	5	13	13	9	10	7	16	14	19	8
Sciences, total	92	126	139	122	141	122	139	140	155	168
Physical sciences, total	16	24	31	31	38	30	31	26	22	19
Astronomy	1	1	1	2	2	1	2	0	2	0
Chemistry	6	15	18	13	18	14	14	9	13	9
Physics	9	8	12	16	18	15	15	17	7	10
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	4	3	10	2	8	2	3	7	5	4
Mathematics	4	3	4	4	10	6	7	5	7	13
Computer sciences	1	2	8	3	5	1	1	4	7	9
Biological sciences	27	27	25	32	28	38	42	35	41	37
Agricultural sciences	4	6	8	7	5	7	10	5	14	13
Psychology	15	30	26	20	16	13	20	20	22	26
Social sciences	21	31	27	23	31	25	25	38	37	47
Non-S&E, total	71	71	72	89	87	75	84	102	106	112
Health	0	1	5	1	5	3	5	12	5	7
Humanities[1]	29	33	39	42	35	40	36	47	58	50
Education	30	28	21	33	39	21	30	32	30	40
Professional/other	12	9	7	13	8	11	13	11	13	15
Grand total, all fields	187	227	242	247	264	234	260	284	304	334
	U.S. citizens and permanent residents, male, white									
Science and engineering, total	8,213	8,648	8,584	8,623	8,725	8,731	8,680	8,646	8,496	8,466
Engineering, total	1,502	1,614	1,602	1,640	1,764	1,715	1,770	1,913	1,937	1,857
Chemical	293	270	277	225	244	211	196	205	239	224
Civil	157	167	143	147	143	153	160	168	179	171
Electrical	378	411	444	447	504	494	522	521	519	466
Mechanical	224	267	236	307	296	311	313	353	341	331
Other engineering	450	499	502	514	577	546	579	666	659	665
Sciences, total	6,711	7,034	6,982	6,983	6,961	7,016	6,910	6,733	6,559	6,609
Physical sciences, total	1,454	1,623	1,585	1,574	1,523	1,617	1,475	1,457	1,466	1,459
Astronomy	63	70	77	84	79	78	92	101	109	96
Chemistry	872	969	926	901	846	872	760	755	771	781
Physics	509	570	572	575	590	656	612	594	575	573
Other physical sciences	10	14	10	14	8	11	11	7	11	9
Earth, atmospheric, & ocean sciences	388	385	415	353	345	381	356	340	350	323
Mathematics	281	293	335	332	352	361	409	373	342	373
Computer sciences	252	259	282	309	327	326	349	295	292	324
Biological sciences	1,784	1,821	1,871	1,847	1,835	1,758	1,772	1,770	1,750	1,798
Agricultural sciences	421	455	422	364	323	367	369	307	293	277
Psychology	1,065	1,075	991	1,078	1,096	1,029	982	905	828	876
Social sciences	1,066	1,123	1,081	1,126	1,160	1,177	1,198	1,286	1,238	1,179
Non-S&E, total	4,215	4,512	4,569	4,656	4,623	4,827	4,854	4,582	4,415	4,363
Health	195	203	199	177	208	258	234	211	215	228
Humanities[1]	1,302	1,505	1,516	1,629	1,606	1,727	1,823	1,740	1,842	1,849
Education	1,911	2,029	2,002	1,997	1,992	1,968	1,858	1,830	1,607	1,584
Professional/other	807	775	852	853	817	874	939	801	751	702
Grand total, all fields	12,428	13,160	13,153	13,279	13,348	13,558	13,534	13,228	12,911	12,829

See explanatory information, if any, and SOURCE at end of table.

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Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, female									
Science and engineering, total	4,921	5,182	5,597	5,577	6,024	6,494	6,913	6,960	6,938	7,124
Engineering, total	275	276	316	328	348	448	520	523	509	447
Chemical	69	62	60	82	64	78	88	98	77	76
Civil	40	34	25	23	32	55	52	47	58	57
Electrical	36	47	48	67	80	88	120	105	106	91
Mechanical	19	24	37	25	36	54	49	60	55	50
Other engineering	111	109	146	131	136	173	211	213	213	173
Sciences, total	4,646	4,906	5,281	5,249	5,676	6,046	6,393	6,437	6,429	6,677
Physical sciences, total	437	470	454	514	521	625	708	610	585	599
Astronomy	13	18	7	15	23	21	25	35	26	28
Chemistry	365	383	368	401	401	464	537	439	429	458
Physics	58	62	76	94	94	137	143	134	124	106
Other physical sciences	1	7	3	4	3	3	3	2	6	7
Earth, atmospheric, & ocean sciences	120	118	157	147	120	144	144	130	160	169
Mathematics	101	93	112	117	164	151	183	145	172	197
Computer sciences	84	90	94	83	109	94	143	91	99	120
Biological sciences	1,276	1,312	1,390	1,438	1,584	1,743	1,860	1,941	1,909	1,909
Agricultural sciences	164	159	137	150	134	160	135	175	156	181
Psychology	1,563	1,772	1,890	1,780	1,938	1,967	2,056	2,183	2,093	2,204
Social sciences	901	892	1,047	1,020	1,106	1,162	1,164	1,162	1,255	1,298
Non-S&E, total	5,571	6,066	6,221	6,601	6,696	7,028	7,270	7,363	7,148	7,346
Health	531	517	587	629	679	722	720	724	735	817
Humanities[1]	1,243	1,422	1,491	1,608	1,697	1,788	1,978	2,045	2,014	2,082
Education	3,189	3,429	3,441	3,670	3,590	3,756	3,752	3,824	3,669	3,653
Professional/other	608	698	702	694	730	762	820	770	730	794
Grand total, all fields	10,492	11,248	11,818	12,178	12,720	13,522	14,183	14,323	14,086	14,470
	U.S. citizens and permanent residents, female, American Indian/Alaskan Native									
Science and engineering, total	20	18	19	27	18	24	25	34	35	42
Engineering, total	2	0	2	3	0	2	0	2	3	4
Chemical	0	0	1	0	0	0	0	0	1	3
Civil	1	0	0	1	0	0	0	1	1	0
Electrical	0	0	1	1	0	0	0	1	0	0
Mechanical	0	0	0	0	0	0	0	0	1	0
Other engineering	1	0	0	1	0	2	0	0	0	1
Sciences, total	18	18	17	24	18	22	25	32	32	38
Physical sciences, total	0	0	2	2	2	1	3	1	0	1
Astronomy	0	0	0	0	0	0	0	0	0	0
Chemistry	0	0	2	2	1	0	3	1	0	1
Physics	0	0	0	0	1	1	0	0	0	0
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	2	1	1	0	0	0	0	0	1	1
Mathematics	0	0	0	1	0	0	1	0	0	2
Computer sciences	1	0	0	0	1	1	0	2	1	0
Biological sciences	3	1	4	5	2	5	5	9	4	6
Agricultural sciences	1	0	0	0	0	0	0	3	0	2
Psychology	8	13	8	9	9	7	8	9	12	18
Social sciences	3	3	2	7	4	8	8	8	14	8
Non-S&E, total	25	27	39	40	42	48	42	51	54	43
Health	3	0	2	2	6	5	7	3	4	3
Humanities[1]	5	2	7	6	3	8	8	9	11	7
Education	15	21	27	30	30	27	24	38	33	24
Professional/other	2	4	3	2	3	8	3	1	6	9
Grand total, all fields	45	45	58	67	60	72	67	85	89	85

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, female, Asian/Pacific Islander									
Science and engineering, total	241	252	374	418	531	820	1,114	983	893	764
Engineering, total	34	33	49	61	61	119	170	133	118	98
Chemical	11	11	9	16	7	25	25	18	12	19
Civil	3	3	4	2	2	4	14	14	14	6
Electrical	8	6	5	21	25	31	46	29	39	31
Mechanical	1	3	3	4	3	24	23	17	16	11
Other engineering	11	10	28	18	24	35	62	55	37	31
Sciences, total	207	219	325	357	470	701	944	850	775	666
Physical sciences, total	36	42	48	80	97	178	211	145	133	101
Astronomy	2	2	0	2	2	1	4	4	1	3
Chemistry	23	29	36	56	72	129	146	108	93	72
Physics	11	11	12	22	23	47	61	33	38	26
Other physical sciences	0	0	0	0	0	1	0	0	1	0
Earth, atmospheric, & ocean sciences	4	1	6	8	8	17	28	12	20	19
Mathematics	3	7	18	19	36	26	50	36	28	27
Computer sciences	10	7	15	12	19	16	30	16	26	23
Biological sciences	89	87	129	133	172	269	410	408	349	291
Agricultural sciences	6	6	8	12	9	20	16	30	18	18
Psychology	27	31	44	39	51	77	78	93	94	86
Social sciences	32	38	57	54	78	98	121	110	107	101
Non-S&E, total	122	145	185	210	199	257	326	316	333	319
Health	9	22	23	30	23	46	42	42	50	50
Humanities [1]	37	34	42	51	66	67	110	105	106	114
Education	59	65	85	96	86	107	118	114	128	108
Professional/other	17	24	35	33	24	37	56	55	49	47
Grand total, all fields	363	397	559	628	730	1,077	1,440	1,299	1,226	1,083
	U.S. citizens and permanent residents, female, black									
Science and engineering, total	153	149	194	170	208	216	270	253	289	346
Engineering, total	3	6	8	6	11	13	15	19	23	22
Chemical	1	2	1	1	3	4	1	5	6	1
Civil	0	0	2	0	2	2	3	1	0	2
Electrical	0	1	2	2	2	3	4	5	4	4
Mechanical	0	0	1	0	0	1	1	3	1	0
Other engineering	2	3	2	3	4	3	6	5	12	15
Sciences, total	150	143	186	164	197	203	255	234	266	324
Physical sciences, total	7	7	5	6	10	13	18	13	10	29
Astronomy	0	0	0	1	0	0	0	0	1	0
Chemistry	7	7	5	5	9	9	17	10	8	26
Physics	0	0	0	0	0	4	1	3	1	3
Other physical sciences	0	0	0	0	1	0	0	0	0	0
Earth, atmospheric, & ocean sciences	1	2	1	1	0	1	0	2	2	3
Mathematics	3	1	4	0	1	3	1	2	2	7
Computer sciences	1	0	4	1	4	2	4	3	1	8
Biological sciences	24	22	32	24	32	45	43	40	60	68
Agricultural sciences	1	1	1	4	4	6	6	0	6	4
Psychology	61	72	86	78	75	78	112	115	114	112
Social sciences	52	38	53	50	71	55	71	59	71	93
Non-S&E, total	357	422	420	427	493	510	592	563	554	632
Health	20	18	23	24	41	35	42	36	40	49
Humanities [1]	36	35	48	43	42	55	61	66	71	71
Education	270	327	293	327	356	360	425	406	384	455
Professional/other	31	42	56	33	54	60	64	55	59	57
Grand total, all fields	510	571	614	597	701	726	862	816	843	978

See explanatory information, if any, and SOURCE at end of table.

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Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, female, Hispanic									
Science and engineering, total	155	178	186	205	222	230	232	272	265	326
Engineering, total	8	9	10	15	12	6	11	14	23	13
Chemical	4	1	4	4	3	0	2	6	3	0
Civil	0	2	2	1	2	3	1	0	1	3
Electrical	1	1	0	3	3	0	1	3	6	2
Mechanical	1	1	2	2	0	1	0	0	3	1
Other engineering	2	4	2	5	4	2	7	5	10	7
Sciences, total	147	169	176	190	210	224	221	258	242	313
Physical sciences, total	18	26	11	20	20	21	21	12	15	11
Astronomy	0	0	0	1	0	0	2	1	1	0
Chemistry	17	24	9	16	18	16	14	7	12	9
Physics	1	2	2	3	2	5	5	4	2	2
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	3	4	2	6	2	2	6	6	4	6
Mathematics	4	4	4	3	2	3	4	0	6	7
Computer sciences	3	1	1	1	1	0	4	7	2	1
Biological sciences	21	33	39	43	57	62	47	66	63	80
Agricultural sciences	3	6	3	4	5	12	5	4	7	13
Psychology	63	57	70	78	86	90	97	120	107	152
Social sciences	32	38	46	35	37	34	37	43	38	43
Non-S&E, total	163	210	223	222	234	282	290	269	301	307
Health	7	15	9	9	16	18	15	22	24	25
Humanities[1]	49	75	72	63	73	89	82	90	97	90
Education	98	105	124	132	128	159	167	130	160	171
Professional/other	9	15	18	18	17	16	26	27	20	21
Grand total, all fields	318	388	409	427	456	512	522	541	566	633
	U.S. citizens and permanent residents, female, Puerto Rican									
Science and engineering, total	39	48	47	49	42	59	63	68	73	103
Engineering, total	1	2	2	3	2	0	2	5	4	1
Chemical	0	0	1	0	0	0	1	2	0	0
Civil	0	0	0	0	1	0	0	0	0	0
Electrical	0	1	0	1	1	0	0	0	1	0
Mechanical	1	0	0	1	0	0	0	0	0	0
Other engineering	0	1	1	1	0	0	1	3	3	1
Sciences, total	38	46	45	46	40	59	61	63	69	102
Physical sciences, total	4	10	6	6	5	7	9	4	2	5
Astronomy	0	0	0	0	0	0	1	0	0	0
Chemistry	4	10	5	5	5	6	8	3	2	5
Physics	0	0	1	1	0	1	0	1	0	0
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	0	1	0	0	0	0	1	0	1	3
Mathematics	3	0	0	1	0	0	1	0	1	3
Computer sciences	0	0	0	0	1	0	0	1	0	1
Biological sciences	4	10	11	11	11	14	9	18	16	23
Agricultural sciences	2	1	0	0	3	3	0	1	1	1
Psychology	16	15	14	19	11	30	31	33	37	58
Social sciences	9	9	14	9	9	5	10	6	11	8
Non-S&E, total	51	58	60	70	69	75	86	69	85	71
Health	3	6	1	1	3	4	5	5	7	4
Humanities[1]	12	20	19	12	18	22	16	22	23	17
Education	35	30	36	53	45	45	50	34	49	44
Professional/other	1	2	4	4	3	4	15	8	6	6
Grand total, all fields	90	106	107	119	111	134	149	137	158	174

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, female, Mexican American									
Science and engineering, total	38	37	42	41	49	58	61	54	68	87
Engineering, total	5	2	2	0	2	2	1	3	7	3
Chemical	3	0	1	0	0	0	1	1	1	0
Civil	0	1	0	0	0	0	0	0	1	1
Electrical	1	0	0	0	0	0	0	1	3	0
Mechanical	0	1	1	0	0	0	0	0	0	0
Other engineering	1	0	0	0	2	2	0	1	2	2
Sciences, total	33	35	40	41	47	56	60	51	61	84
Physical sciences, total	2	3	3	2	3	4	4	3	2	3
Astronomy	0	0	0	0	0	0	1	0	0	0
Chemistry	2	3	2	2	2	3	2	2	2	3
Physics	0	0	1	0	1	1	1	1	0	0
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	0	1	0	2	0	0	1	2	1	1
Mathematics	0	2	2	0	1	1	2	0	1	3
Computer sciences	0	0	0	0	0	0	2	0	0	0
Biological sciences	3	7	7	13	11	13	11	12	21	22
Agricultural sciences	0	1	1	1	1	2	1	1	0	3
Psychology	21	14	15	18	26	23	33	20	28	35
Social sciences	7	7	12	5	5	13	6	13	8	17
Non-S&E, total	37	35	58	53	71	89	70	73	72	115
Health	2	6	3	5	5	3	5	4	7	14
Humanities[1]	10	8	13	10	16	19	13	20	13	24
Education	24	19	39	32	44	64	51	41	48	70
Professional/other	1	2	3	6	6	3	1	8	4	7
Grand total, all fields	75	72	100	94	120	147	131	127	140	202
	U.S. citizens and permanent residents, female, other Hispanic									
Science and engineering, total	78	93	97	115	131	113	108	150	124	136
Engineering, total	2	5	6	12	8	4	8	6	12	9
Chemical	1	1	2	4	3	0	0	3	2	0
Civil	0	1	2	1	1	3	1	0	0	2
Electrical	0	0	0	2	2	0	1	2	2	2
Mechanical	0	0	1	1	0	1	0	0	3	1
Other engineering	1	3	1	4	2	0	6	1	5	4
Sciences, total	76	88	91	103	123	109	100	144	112	127
Physical sciences, total	12	13	2	12	12	10	8	5	11	3
Astronomy	0	0	0	1	0	0	0	1	1	0
Chemistry	11	11	2	9	11	7	4	2	8	1
Physics	1	2	0	2	1	3	4	2	2	2
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	3	2	2	4	2	2	4	4	2	2
Mathematics	1	2	2	2	1	2	1	0	4	1
Computer sciences	3	1	1	1	0	0	2	6	2	0
Biological sciences	14	16	21	19	35	35	27	36	26	35
Agricultural sciences	1	4	2	3	1	7	4	2	6	9
Psychology	26	28	41	41	49	37	33	67	42	59
Social sciences	16	22	20	21	23	16	21	24	19	18
Non-S&E, total	75	117	105	99	94	118	134	127	144	121
Health	2	3	5	3	8	11	5	13	10	7
Humanities[1]	27	47	40	41	39	48	53	48	61	49
Education	39	56	49	47	39	50	66	55	63	57
Professional/other	7	11	11	8	8	9	10	11	10	8
Grand total, all fields	153	210	202	214	225	231	242	277	268	257

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens and permanent residents, female, white									
Science and engineering, total	4,288	4,522	4,739	4,703	5,012	5,158	5,222	5,353	5,221	5,463
Engineering, total	224	226	235	240	261	305	320	347	330	303
Chemical	52	48	45	59	51	48	60	69	52	52
Civil	34	29	16	19	25	46	34	31	40	45
Electrical	27	39	34	40	49	54	66	67	54	53
Mechanical	17	19	30	19	32	26	25	39	33	37
Other engineering	94	91	110	103	104	131	135	141	151	116
Sciences, total	4,064	4,296	4,504	4,463	4,751	4,853	4,902	5,006	4,891	5,160
Physical sciences, total	374	385	383	399	388	408	447	431	409	448
Astronomy	11	16	6	11	21	19	19	30	22	25
Chemistry	316	315	313	318	299	307	351	308	302	342
Physics	46	48	61	66	66	80	74	91	80	74
Other physical sciences	1	6	3	4	2	2	3	2	5	7
Earth, atmospheric, & ocean sciences	110	109	142	132	110	123	108	109	127	139
Mathematics	88	79	84	93	124	118	126	105	131	149
Computer sciences	67	80	73	69	83	75	104	61	65	82
Biological sciences	1,120	1,154	1,170	1,221	1,311	1,349	1,347	1,401	1,390	1,428
Agricultural sciences	149	146	123	129	115	120	104	137	119	140
Psychology	1,388	1,573	1,661	1,558	1,711	1,701	1,745	1,836	1,673	1,754
Social sciences	768	770	868	862	909	959	921	926	977	1,020
Non-S&E, total	4,854	5,196	5,293	5,643	5,692	5,878	5,963	6,104	5,681	5,861
Health	489	459	521	558	592	609	601	611	606	675
Humanities[1]	1,097	1,261	1,305	1,432	1,503	1,556	1,700	1,754	1,671	1,739
Education	2,723	2,871	2,887	3,054	2,973	3,076	2,995	3,110	2,822	2,806
Professional/other	545	605	580	599	624	637	667	629	582	641
Grand total, all fields	9,142	9,718	10,032	10,346	10,704	11,036	11,185	11,457	10,902	11,324
	U.S. citizens									
Science and engineering, total	13,468	14,167	14,629	14,559	14,932	15,166	15,487	15,621	15,973	16,109
Engineering, total	1,864	1,957	2,086	2,109	2,228	2,215	2,386	2,591	2,710	2,543
Chemical	382	342	348	318	324	293	291	318	320	326
Civil	188	180	173	164	168	203	206	212	248	242
Electrical	440	491	554	597	630	634	683	705	746	631
Mechanical	259	299	297	352	347	359	383	436	451	431
Other engineering	595	645	714	678	759	726	823	920	945	913
Sciences, total	11,604	12,210	12,543	12,450	12,704	12,951	13,101	13,030	13,263	13,566
Physical sciences, total	1,984	2,169	2,120	2,157	2,093	2,198	2,137	2,075	2,122	2,123
Astronomy	78	92	84	100	106	103	120	137	150	132
Chemistry	1,298	1,398	1,351	1,328	1,272	1,291	1,238	1,168	1,229	1,275
Physics	597	660	671	709	704	789	764	761	728	700
Other physical sciences	11	19	14	20	11	15	15	9	15	16
Earth, atmospheric, & ocean sciences	518	516	592	506	463	507	478	462	524	497
Mathematics	393	375	463	454	496	504	554	488	520	573
Computer sciences	338	348	388	422	425	426	484	421	422	467
Biological sciences	3,118	3,191	3,314	3,328	3,449	3,422	3,494	3,547	3,651	3,726
Agricultural sciences	606	630	564	511	457	519	492	473	466	461
Psychology	2,683	2,919	2,953	2,900	3,071	3,052	3,083	3,122	3,019	3,167
Social sciences	1,964	2,062	2,149	2,172	2,250	2,323	2,379	2,442	2,539	2,552
Non-S&E, total	9,933	10,738	10,944	11,451	11,517	11,981	12,253	12,120	11,961	12,109
Health	729	721	779	809	879	961	938	933	949	1,035
Humanities[1]	2,530	2,899	2,975	3,211	3,274	3,486	3,747	3,726	3,907	3,984
Education	5,246	5,634	5,614	5,852	5,791	5,864	5,777	5,866	5,548	5,529
Professional/other	1,428	1,484	1,576	1,579	1,573	1,670	1,791	1,595	1,557	1,561
Grand total, all fields	23,401	24,905	25,573	26,010	26,449	27,147	27,740	27,741	27,934	28,218

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, American Indian/Alaskan Native									
Science and engineering, total	53	43	56	69	43	64	69	95	79	96
Engineering, total	7	4	6	11	2	6	10	14	16	13
Chemical	1	0	1	1	1	1	2	1	4	3
Civil	1	2	1	1	0	0	0	2	2	0
Electrical	0	0	2	4	0	1	2	2	4	3
Mechanical	0	0	1	1	0	0	2	3	6	2
Other engineering	5	2	1	4	1	4	4	6	0	5
Sciences, total	46	39	50	58	41	58	59	81	63	83
Physical sciences, total	10	3	10	12	5	6	9	6	9	10
Astronomy	2	0	0	0	1	0	0	0	1	1
Chemistry	5	3	9	6	2	4	7	4	6	7
Physics	3	0	1	6	2	2	2	2	2	2
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	6	1	3	1	4	1	0	2	2	3
Mathematics	0	1	0	2	1	2	2	1	1	3
Computer sciences	2	0	1	2	1	1	0	4	1	3
Biological sciences	7	4	10	13	7	16	15	21	9	12
Agricultural sciences	2	4	4	0	1	1	2	5	5	9
Psychology	11	19	13	15	15	12	14	18	18	31
Social sciences	8	7	9	13	7	19	17	24	18	12
Non-S&E, total	41	54	74	80	77	79	80	91	87	93
Health	3	1	5	5	6	6	9	4	6	4
Humanities[1]	7	6	10	18	10	20	18	18	19	21
Education	25	37	55	50	51	37	41	60	51	50
Professional/other	6	10	4	7	10	16	12	9	11	18
Grand total, all fields	94	97	130	149	120	143	149	186	166	189
	U.S. citizens, Asian/Pacific Islander									
Science and engineering, total	494	488	599	651	712	736	895	835	1,004	875
Engineering, total	174	157	187	214	217	202	255	271	289	244
Chemical	40	26	27	25	26	27	27	27	17	36
Civil	15	8	11	12	10	7	15	17	13	16
Electrical	48	51	67	95	86	97	92	108	128	87
Mechanical	25	27	26	35	34	28	39	40	47	36
Other engineering	46	45	56	47	61	43	82	79	84	69
Sciences, total	320	331	412	437	495	534	640	564	715	631
Physical sciences, total	75	86	86	108	121	122	148	108	153	119
Astronomy	0	1	0	2	3	4	4	5	6	6
Chemistry	42	54	63	65	76	70	91	56	83	71
Physics	33	31	23	41	42	47	53	47	64	42
Other physical sciences	0	0	0	0	0	1	0	0	0	0
Earth, atmospheric, & ocean sciences	12	4	7	14	6	7	8	8	18	6
Mathematics	13	11	23	21	28	18	25	23	35	25
Computer sciences	18	10	32	37	27	33	42	37	41	40
Biological sciences	122	116	160	134	190	194	229	237	255	250
Agricultural sciences	7	11	9	13	9	14	10	13	16	6
Psychology	38	44	46	47	52	81	84	77	101	93
Social sciences	35	49	49	63	62	65	94	61	96	92
Non-S&E, total	139	153	190	197	179	214	245	256	292	293
Health	11	26	23	32	17	36	23	39	42	32
Humanities[1]	41	30	43	46	53	59	85	82	102	104
Education	57	67	85	80	85	81	82	92	99	102
Professional/other	30	30	39	39	24	38	55	43	49	55
Grand total, all fields	633	641	789	848	891	950	1,140	1,091	1,296	1,168

See explanatory information, if any, and SOURCE at end of table.

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Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, black									
Science and engineering, total	298	292	368	323	376	391	471	492	531	570
Engineering, total	24	28	43	32	41	44	54	59	82	76
Chemical	2	5	4	8	4	6	2	10	12	3
Civil	2	0	8	0	3	8	7	6	9	8
Electrical	8	7	16	12	13	14	20	17	27	22
Mechanical	5	5	3	3	2	4	8	9	10	13
Other engineering	7	11	12	9	19	12	17	17	24	30
Sciences, total	274	264	325	291	335	347	417	433	449	494
Physical sciences, total	25	19	25	21	29	33	37	46	45	50
Astronomy	0	1	0	1	2	0	1	0	2	1
Chemistry	20	14	19	13	19	23	27	34	30	39
Physics	5	4	6	6	7	9	9	12	13	10
Other physical sciences	0	0	0	1	1	1	0	0	0	0
Earth, atmospheric, & ocean sciences	3	3	2	5	2	3	2	3	5	8
Mathematics	6	4	9	4	5	9	4	8	6	12
Computer sciences	1	1	5	4	5	7	9	12	4	12
Biological sciences	46	37	51	47	64	67	91	82	100	98
Agricultural sciences	6	9	6	6	5	10	9	15	15	8
Psychology	96	111	126	101	117	112	145	146	145	149
Social sciences	91	80	101	103	108	106	120	121	129	157
Non-S&E, total	524	609	642	648	735	710	838	823	805	897
Health	24	25	35	35	52	41	55	42	51	57
Humanities[1]	63	69	84	84	82	94	96	107	121	130
Education	390	456	437	467	516	486	585	582	530	619
Professional/other	47	59	86	62	85	89	102	92	103	91
Grand total, all fields	822	901	1,010	971	1,111	1,101	1,309	1,315	1,336	1,467
	U.S. citizens, Hispanic									
Science and engineering, total	313	390	410	433	444	463	486	531	568	682
Engineering, total	33	39	48	57	56	49	61	86	83	100
Chemical	5	7	10	10	10	5	12	15	6	10
Civil	4	6	5	6	7	7	7	2	10	15
Electrical	10	9	11	14	16	16	14	26	23	27
Mechanical	3	3	8	10	3	7	5	11	14	19
Other engineering	11	14	14	17	20	14	23	32	30	29
Sciences, total	280	351	362	376	388	414	425	445	485	582
Physical sciences, total	52	63	54	58	65	75	61	50	57	49
Astronomy	1	2	1	4	1	2	3	1	3	2
Chemistry	40	50	39	34	43	49	38	31	35	34
Physics	11	11	14	20	21	24	20	18	19	13
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	6	11	12	13	8	7	7	13	15	15
Mathematics	8	7	6	10	9	12	12	8	15	25
Computer sciences	4	4	11	7	5	5	6	12	15	13
Biological sciences	58	73	79	90	93	111	104	109	131	150
Agricultural sciences	12	14	7	9	14	16	10	9	14	25
Psychology	87	100	113	122	120	128	137	167	159	197
Social sciences	53	79	80	67	74	60	88	77	79	108
Non-S&E, total	269	331	321	345	390	421	433	419	479	508
Health	10	17	12	12	19	20	29	31	29	36
Humanities[1]	77	104	105	98	122	129	122	135	168	150
Education	158	179	175	200	213	226	235	204	243	277
Professional/other	24	31	29	35	36	46	47	49	39	45
Grand total, all fields	582	721	731	778	834	884	919	950	1,047	1,190

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, Puerto Rican									
Science and engineering, total	93	115	99	120	112	131	137	142	172	171
Engineering, total	7	6	9	13	10	10	13	22	23	17
Chemical	1	2	2	3	2	2	4	4	1	3
Civil	1	1	1	1	1	1	1	1	5	1
Electrical	1	2	0	3	5	3	3	4	4	3
Mechanical	3	0	2	1	1	1	1	3	6	5
Other engineering	1	1	4	5	1	3	4	10	7	5
Sciences, total	86	109	90	107	102	121	124	120	149	154
Physical sciences, total	20	24	17	20	17	26	21	12	20	11
Astronomy	1	1	0	1	0	0	1	0	0	1
Chemistry	16	20	14	14	14	19	17	9	13	9
Physics	3	3	3	5	3	7	3	3	7	1
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	0	5	0	3	1	0	2	3	5	5
Mathematics	4	2	0	2	1	1	1	3	4	7
Computer sciences	0	2	3	1	1	4	0	5	6	2
Biological sciences	18	24	23	27	27	28	30	32	37	43
Agricultural sciences	7	5	0	3	10	5	3	4	4	3
Psychology	21	26	20	35	24	43	44	48	57	69
Social sciences	16	21	27	16	21	14	23	13	16	14
Non-S&E, total	83	95	92	109	120	126	132	109	139	128
Health	4	6	3	4	3	6	12	7	10	7
Humanities[1]	22	28	30	22	36	38	30	38	49	36
Education	52	56	52	76	70	68	69	51	70	71
Professional/other	5	5	7	7	11	14	21	13	10	14
Grand total, all fields	176	210	191	229	232	257	269	251	311	299
	U.S. citizens, Mexican American									
Science and engineering, total	82	96	117	110	103	134	138	142	152	213
Engineering, total	10	12	14	10	10	14	14	26	19	28
Chemical	1	2	4	1	1	1	3	4	3	1
Civil	1	2	2	2	0	1	3	0	2	5
Electrical	2	4	3	3	2	4	3	9	5	6
Mechanical	0	2	3	2	0	2	1	4	3	3
Other engineering	6	2	2	2	7	6	4	9	6	13
Sciences, total	72	84	103	100	93	120	124	116	133	185
Physical sciences, total	11	11	15	9	9	20	13	20	14	21
Astronomy	0	0	0	0	0	1	1	1	0	1
Chemistry	10	11	12	6	6	16	8	14	9	15
Physics	1	0	3	3	3	3	4	5	5	5
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	1	2	4	6	1	4	3	5	3	5
Mathematics	1	3	3	3	2	4	5	2	3	6
Computer sciences	0	0	0	2	0	0	3	1	2	3
Biological sciences	11	20	23	21	22	29	25	28	38	49
Agricultural sciences	3	6	1	4	2	5	3	2	2	9
Psychology	30	25	34	36	40	38	47	38	48	51
Social sciences	15	17	23	19	17	20	25	20	23	41
Non-S&E, total	78	83	99	97	127	156	137	140	139	193
Health	4	7	3	5	7	3	8	6	7	15
Humanities[1]	21	17	23	22	34	39	33	39	34	52
Education	48	49	64	58	73	100	91	78	89	114
Professional/other	5	10	9	12	13	14	5	17	9	12
Grand total, all fields	160	179	216	207	230	290	275	282	291	406

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, other Hispanic									
Science and engineering, total	138	179	194	203	229	198	211	247	244	298
Engineering, total	16	21	25	34	36	25	34	38	41	55
Chemical	3	3	4	6	7	2	5	7	2	6
Civil	2	3	2	3	6	5	3	1	3	9
Electrical	7	3	8	8	9	9	8	13	14	18
Mechanical	0	1	3	7	2	4	3	4	5	11
Other engineering	4	11	8	10	12	5	15	13	17	11
Sciences, total	122	158	169	169	193	173	177	209	203	243
Physical sciences, total	21	28	22	29	39	29	27	18	23	17
Astronomy	0	1	1	3	1	1	1	0	3	0
Chemistry	14	19	13	14	23	14	13	8	13	10
Physics	7	8	8	12	15	14	13	10	7	7
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	5	4	8	4	6	3	2	5	7	5
Mathematics	3	2	3	5	6	7	6	3	8	12
Computer sciences	4	2	8	4	4	1	3	6	7	8
Biological sciences	29	29	33	42	44	54	49	49	56	58
Agricultural sciences	2	3	6	2	2	6	4	3	8	13
Psychology	36	49	59	51	56	47	46	81	54	77
Social sciences	22	41	30	32	36	26	40	44	40	53
Non-S&E, total	108	153	130	139	143	139	164	170	201	187
Health	2	4	6	3	9	11	9	18	12	14
Humanities[1]	34	59	52	54	52	52	59	58	85	62
Education	58	74	59	66	70	58	75	75	84	92
Professional/other	14	16	13	16	12	18	21	19	20	19
Grand total, all fields	246	332	324	342	372	337	375	417	445	485
	U.S. citizens, white									
Science and engineering, total	12,049	12,694	12,839	12,851	13,211	13,356	13,373	13,450	13,186	13,374
Engineering, total	1,583	1,690	1,707	1,750	1,892	1,886	1,956	2,123	2,130	2,028
Chemical	328	299	300	267	282	246	242	261	267	263
Civil	163	162	143	142	147	181	175	184	205	196
Electrical	360	413	430	457	507	503	538	541	523	481
Mechanical	218	261	244	300	303	316	319	369	358	346
Other engineering	514	555	590	584	653	640	682	768	777	742
Sciences, total	10,466	11,004	11,132	11,101	11,319	11,470	11,417	11,327	11,056	11,346
Physical sciences, total	1,777	1,939	1,896	1,917	1,848	1,944	1,845	1,825	1,786	1,826
Astronomy	73	86	81	91	97	94	109	127	128	113
Chemistry	1,167	1,249	1,201	1,192	1,119	1,139	1,064	1,028	1,035	1,089
Physics	526	586	601	616	623	698	659	661	608	609
Other physical sciences	11	18	13	18	9	13	13	9	15	15
Earth, atmospheric, & ocean sciences	484	488	546	469	440	486	452	430	465	449
Mathematics	351	346	403	407	445	455	507	440	443	487
Computer sciences	296	325	330	363	379	375	419	342	337	377
Biological sciences	2,832	2,909	2,965	2,998	3,056	3,005	3,023	3,050	3,052	3,120
Agricultural sciences	560	582	527	475	426	471	456	424	398	402
Psychology	2,423	2,599	2,616	2,580	2,751	2,694	2,679	2,698	2,459	2,578
Social sciences	1,743	1,816	1,849	1,892	1,974	2,040	2,036	2,118	2,116	2,107
Non-S&E, total	8,845	9,477	9,586	10,060	10,050	10,459	10,547	10,406	9,849	9,964
Health	675	648	691	714	782	846	807	805	806	881
Humanities[1]	2,288	2,649	2,685	2,927	2,969	3,150	3,376	3,338	3,356	3,445
Education	4,576	4,842	4,820	5,007	4,897	4,989	4,801	4,879	4,386	4,334
Professional/other	1,306	1,338	1,390	1,412	1,402	1,474	1,563	1,384	1,301	1,304
Grand total, all fields	20,894	22,171	22,425	22,911	23,261	23,815	23,920	23,856	23,035	23,338

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, male									
Science and engineering, total	8,821	9,274	9,391	9,397	9,429	9,463	9,598	9,569	9,808	9,661
Engineering, total	1,615	1,709	1,807	1,826	1,932	1,872	2,012	2,176	2,299	2,173
Chemical	322	288	297	250	265	236	221	235	259	262
Civil	151	151	152	144	138	155	170	175	203	193
Electrical	411	446	510	542	573	570	604	623	672	565
Mechanical	240	276	283	329	314	327	355	391	405	390
Other engineering	491	548	585	561	642	584	662	752	760	763
Sciences, total	7,206	7,565	7,584	7,571	7,497	7,591	7,586	7,393	7,509	7,488
Physical sciences, total	1,582	1,747	1,708	1,710	1,647	1,745	1,618	1,608	1,652	1,616
Astronomy	67	76	77	87	86	83	99	106	125	109
Chemistry	956	1,046	1,015	971	920	946	829	835	880	887
Physics	549	613	605	636	633	703	677	660	636	611
Other physical sciences	10	12	11	16	8	13	13	7	11	9
Earth, atmospheric, & ocean sciences	404	398	444	368	351	382	366	348	382	351
Mathematics	300	293	370	357	372	382	422	383	382	403
Computer sciences	266	268	305	353	343	349	368	344	341	367
Biological sciences	1,928	1,958	2,024	1,999	2,000	1,930	2,006	1,962	2,024	2,057
Agricultural sciences	450	483	436	377	333	387	380	328	331	309
Psychology	1,146	1,195	1,106	1,176	1,202	1,143	1,093	1,017	988	1,023
Social sciences	1,130	1,223	1,191	1,231	1,249	1,273	1,333	1,403	1,409	1,362
Non-S&E, total	4,575	4,891	4,997	5,122	5,088	5,272	5,369	5,131	5,136	5,105
Health	207	221	221	203	226	283	263	247	250	262
Humanities[1]	1,390	1,580	1,606	1,728	1,699	1,837	1,939	1,854	2,050	2,057
Education	2,132	2,272	2,255	2,263	2,282	2,200	2,149	2,149	1,969	1,975
Professional/other	846	818	915	928	881	952	1,018	881	867	811
Grand total, all fields	13,396	14,165	14,388	14,519	14,517	14,735	14,967	14,700	14,944	14,766
	U.S. citizens, male, American Indian/Alaskan Native									
Science and engineering, total	33	25	37	42	25	40	44	62	44	54
Engineering, total	5	4	4	8	2	4	10	12	13	9
Chemical	1	0	0	1	1	1	2	1	3	0
Civil	0	2	1	0	0	0	0	1	1	0
Electrical	0	0	1	3	0	1	2	1	4	3
Mechanical	0	0	1	1	0	0	2	3	5	2
Other engineering	4	2	1	3	1	2	4	6	0	4
Sciences, total	28	21	33	34	23	36	34	50	31	45
Physical sciences, total	10	3	8	10	3	5	6	5	9	9
Astronomy	2	0	0	0	1	0	0	0	1	1
Chemistry	5	3	7	4	1	4	4	3	6	6
Physics	3	0	1	6	1	1	2	2	2	2
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	4	0	2	1	4	1	0	2	1	2
Mathematics	0	1	0	1	1	2	1	1	1	1
Computer sciences	1	0	1	2	0	0	0	2	0	3
Biological sciences	4	3	6	8	5	11	10	12	5	6
Agricultural sciences	1	4	4	0	1	1	2	2	5	7
Psychology	3	6	5	6	6	5	6	9	6	13
Social sciences	5	4	7	6	3	11	9	17	4	4
Non-S&E, total	16	27	37	40	35	31	38	40	33	50
Health	0	1	3	3	0	1	2	1	2	1
Humanities[1]	2	4	3	12	7	12	10	9	8	14
Education	10	16	29	20	21	10	17	22	18	26
Professional/other	4	6	2	5	7	8	9	8	5	9
Grand total, all fields	49	52	74	82	60	71	82	102	77	104

See explanatory information, if any, and SOURCE at end of table

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Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, male, Asian/Pacific Islander									
Science and engineering, total	371	359	407	450	479	492	574	511	634	523
Engineering, total	151	137	160	181	193	171	203	221	244	192
Chemical	31	19	20	18	22	20	16	17	14	27
Civil	13	7	10	11	10	7	13	11	10	13
Electrical	43	47	64	83	79	86	80	95	112	69
Mechanical	24	25	23	33	33	23	35	36	39	29
Other engineering	40	39	43	36	49	35	59	62	69	54
Sciences, total	220	222	247	269	286	321	371	290	390	331
Physical sciences, total	62	67	66	72	79	88	99	75	108	85
Astronomy	0	1	0	1	2	4	3	3	6	5
Chemistry	34	41	48	36	39	43	52	33	52	49
Physics	28	25	18	35	38	40	44	39	50	31
Other physical sciences	0	0	0	0	0	1	0	0	0	0
Earth, atmospheric, & ocean sciences	10	3	4	11	4	6	7	5	13	3
Mathematics	12	8	18	17	18	14	18	15	29	12
Computer sciences	14	9	25	34	23	29	34	28	30	30
Biological sciences	75	77	91	71	102	114	128	107	130	131
Agricultural sciences	4	9	6	8	5	12	5	6	11	5
Psychology	20	19	13	17	20	20	31	20	22	22
Social sciences	23	30	24	39	35	38	49	34	47	43
Non-S&E, total	75	68	76	81	74	99	96	103	107	121
Health	6	12	10	9	7	15	7	16	15	13
Humanities[1]	24	18	17	22	17	31	28	29	40	39
Education	23	19	26	22	34	28	27	31	24	38
Professional/other	22	19	23	28	16	25	34	27	28	31
Grand total, all fields	446	427	483	531	553	591	670	614	741	644
	U.S. citizens, male, black									
Science and engineering, total	148	153	190	162	180	192	219	254	259	238
Engineering, total	21	23	35	26	30	31	41	40	60	55
Chemical	1	3	3	7	1	2	1	5	6	2
Civil	2	0	6	0	1	6	4	5	9	6
Electrical	8	6	14	10	11	11	16	12	24	18
Mechanical	5	5	2	3	2	3	8	6	9	13
Other engineering	5	9	10	6	15	9	12	12	12	16
Sciences, total	127	130	155	136	150	161	178	214	199	183
Physical sciences, total	18	13	21	16	20	21	20	34	36	25
Astronomy	0	1	0	0	2	0	1	0	1	1
Chemistry	13	8	15	9	11	15	11	24	23	17
Physics	5	4	6	6	7	5	8	10	12	7
Other physical sciences	0	0	0	1	0	1	0	0	0	0
Earth, atmospheric, & ocean sciences	2	1	1	4	2	2	2	1	3	5
Mathematics	4	3	5	4	4	6	3	6	4	5
Computer sciences	0	1	1	3	2	5	5	9	3	4
Biological sciences	23	16	25	25	34	24	52	46	43	33
Agricultural sciences	5	8	5	5	3	7	4	15	10	7
Psychology	35	42	42	25	43	40	37	39	37	38
Social sciences	40	46	55	54	42	56	55	64	63	66
Non-S&E, total	180	198	231	234	261	219	271	281	265	282
Health	4	7	13	11	15	11	14	10	12	10
Humanities[1]	29	35	37	42	44	42	42	47	53	62
Education	129	139	149	148	169	131	177	185	156	174
Professional/other	18	17	32	33	33	35	38	39	44	36
Grand total, all fields	328	351	421	396	441	411	490	535	524	520

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, male, Hispanic									
Science and engineering, total	180	237	241	263	256	262	282	295	333	380
Engineering, total	27	33	38	46	45	44	51	73	62	87
Chemical	3	7	6	8	7	5	10	10	4	10
Civil	4	5	3	5	5	5	6	2	9	12
Electrical	9	8	11	12	13	16	13	23	17	25
Mechanical	2	2	6	8	3	6	5	11	11	18
Other engineering	9	11	12	13	17	12	17	27	21	22
Sciences, total	153	204	203	217	211	218	231	222	271	293
Physical sciences, total	37	41	44	43	49	58	42	41	45	39
Astronomy	1	2	1	3	1	2	1	1	2	2
Chemistry	25	30	31	23	29	36	24	25	25	25
Physics	11	9	12	17	19	20	17	15	18	12
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	4	7	11	9	6	5	4	9	11	10
Mathematics	4	4	3	7	8	9	9	8	10	18
Computer sciences	1	3	10	6	4	5	2	7	13	12
Biological sciences	43	45	44	55	47	61	68	58	74	79
Agricultural sciences	9	11	6	7	9	9	9	6	11	16
Psychology	27	47	47	52	42	42	43	51	58	53
Social sciences	28	46	38	38	46	29	54	42	49	66
Non-S&E, total	127	143	129	147	167	176	178	183	202	227
Health	3	2	4	4	4	3	15	11	7	11
Humanities[1]	41	44	49	51	55	67	59	65	89	82
Education	68	80	63	74	88	76	82	83	85	109
Professional/other	15	17	13	18	20	30	22	24	21	25
Grand total, all fields	307	380	370	410	423	438	460	478	535	607
	U.S. citizens, male, Puerto Rican									
Science and engineering, total	54	67	52	71	70	72	74	74	99	68
Engineering, total	6	4	7	10	8	10	11	17	19	16
Chemical	1	2	1	3	2	2	3	2	1	3
Civil	1	1	1	1	0	1	1	1	5	1
Electrical	1	1	0	2	4	3	3	4	3	3
Mechanical	2	0	2	0	1	1	1	3	6	5
Other engineering	1	0	3	4	1	3	3	7	4	4
Sciences, total	48	63	45	61	62	62	63	57	80	52
Physical sciences, total	16	14	11	14	12	19	12	8	18	6
Astronomy	1	1	0	1	0	0	0	0	0	1
Chemistry	12	10	9	9	9	13	9	6	11	4
Physics	3	3	2	4	3	6	3	2	7	1
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	0	4	0	3	1	0	1	3	4	2
Mathematics	1	2	0	1	1	1	0	3	3	4
Computer sciences	0	2	3	1	0	4	0	4	6	1
Biological sciences	14	14	12	16	16	14	21	14	21	20
Agricultural sciences	5	4	0	3	7	2	3	3	3	2
Psychology	5	11	6	16	13	13	13	15	20	11
Social sciences	7	12	13	7	12	9	13	7	5	6
Non-S&E, total	32	37	32	39	51	51	46	40	54	57
Health	1	0	2	3	0	2	7	2	3	3
Humanities[1]	10	8	11	10	18	16	14	16	26	19
Education	17	26	16	23	25	23	19	17	21	27
Professional/other	4	3	3	3	8	10	6	5	4	8
Grand total, all fields	86	104	84	110	121	123	120	114	153	125

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, male, Mexican American									
Science and engineering, total	48	61	76	72	61	80	79	89	87	130
Engineering, total	7	10	12	10	9	12	13	23	12	25
Chemical	0	2	3	1	1	1	2	3	2	1
Civil	1	1	2	2	0	1	3	0	1	4
Electrical	1	4	3	3	2	4	3	8	2	6
Mechanical	0	1	2	2	0	2	1	4	3	3
Other engineering	5	2	2	2	6	4	4	8	4	11
Sciences, total	41	51	64	62	52	68	66	66	75	105
Physical sciences, total	9	8	12	7	7	17	9	17	12	18
Astronomy	0	0	0	0	0	1	0	1	0	1
Chemistry	8	8	10	4	5	14	6	12	7	12
Physics	1	0	2	3	2	2	3	4	5	5
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	1	1	4	4	1	4	2	3	2	4
Mathematics	1	1	1	3	2	3	3	2	2	3
Computer sciences	0	0	0	2	0	0	1	1	2	3
Biological sciences	8	13	16	10	12	16	16	16	19	29
Agricultural sciences	3	6	1	3	1	4	2	1	2	6
Psychology	10	11	19	19	16	17	14	18	20	18
Social sciences	9	11	11	14	13	7	19	8	16	24
Non-S&E, total	43	48	44	45	56	70	68	70	67	80
Health	2	1	0	0	2	0	3	2	0	1
Humanities[1]	12	9	11	13	18	22	21	21	21	30
Education	25	30	27	26	29	37	40	37	41	44
Professional/other	4	8	6	6	7	11	4	10	5	5
Grand total, all fields	91	109	120	117	117	150	147	159	154	210
	U.S. citizens, male, other Hispanic									
Science and engineering, total	78	109	113	120	125	110	129	132	147	182
Engineering, total	14	19	19	26	28	22	27	33	31	46
Chemical	2	3	2	4	4	2	5	5	1	6
Civil	2	3	0	2	5	3	2	1	3	7
Electrical	7	3	8	7	7	9	7	11	12	16
Mechanical	0	1	2	6	2	3	3	4	2	10
Other engineering	3	9	7	7	10	5	10	12	13	7
Sciences, total	64	90	94	94	97	88	102	99	116	136
Physical sciences, total	12	19	21	22	30	22	21	16	15	15
Astronomy	0	1	1	2	1	1	1	0	2	0
Chemistry	5	12	12	10	15	9	9	7	7	9
Physics	7	6	8	10	14	12	11	9	6	6
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	3	2	7	2	4	1	1	3	5	4
Mathematics	2	1	2	3	5	5	6	3	5	11
Computer sciences	1	1	7	3	4	1	1	2	5	8
Biological sciences	21	18	16	29	19	31	31	28	34	30
Agricultural sciences	1	1	5	1	1	3	4	2	6	8
Psychology	12	25	22	17	13	12	16	18	18	24
Social sciences	12	23	14	17	21	13	22	27	28	36
Non-S&E, total	52	58	53	63	60	55	64	73	81	90
Health	0	1	2	1	2	1	5	7	4	7
Humanities[1]	19	27	27	28	19	29	24	28	42	33
Education	26	24	20	25	34	16	23	29	23	38
Professional/other	7	6	4	9	5	9	12	9	12	12
Grand total, all fields	130	167	166	183	185	165	193	205	228	272

See explanatory information, if any, and SOURCE at end of table.

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Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, male, white									
Science and engineering, total	7,881	8,291	8,237	8,293	8,370	8,356	8,327	8,288	8,151	8,126
Engineering, total	1,371	1,474	1,486	1,523	1,644	1,595	1,660	1,799	1,820	1,753
Chemical	280	254	262	211	233	201	186	198	219	213
Civil	131	135	128	125	122	137	145	155	167	155
Electrical	337	374	397	419	462	453	479	481	477	439
Mechanical	201	242	217	281	272	291	295	332	326	314
Other engineering	422	469	482	487	555	513	555	633	631	632
Sciences, total	6,510	6,817	6,751	6,770	6,726	6,761	6,667	6,489	6,331	6,373
Physical sciences, total	1,412	1,571	1,524	1,535	1,473	1,557	1,420	1,419	1,398	1,397
Astronomy	62	70	75	81	78	75	91	98	106	91
Chemistry	857	942	896	885	828	843	732	738	746	762
Physics	483	547	543	555	560	628	586	576	535	536
Other physical sciences	10	12	10	14	7	11	11	7	11	8
Earth, atmospheric, & ocean sciences	377	379	409	339	332	366	346	326	341	316
Mathematics	268	272	324	319	334	344	388	347	323	350
Computer sciences	235	248	260	299	307	305	320	286	275	302
Biological sciences	1,745	1,776	1,825	1,802	1,782	1,700	1,722	1,706	1,708	1,744
Agricultural sciences	415	441	406	349	314	353	357	293	282	267
Psychology	1,049	1,059	980	1,059	1,081	1,022	967	892	819	859
Social sciences	1,009	1,071	1,023	1,068	1,103	1,114	1,147	1,220	1,185	1,138
Non-S&E, total	4,106	4,398	4,447	4,549	4,498	4,699	4,725	4,456	4,298	4,244
Health	191	198	186	171	198	250	222	206	210	217
Humanities[1]	1,257	1,451	1,466	1,574	1,546	1,662	1,764	1,679	1,772	1,779
Education	1,882	1,999	1,968	1,977	1,958	1,937	1,833	1,803	1,587	1,568
Professional/other	776	750	827	827	796	850	906	768	729	680
Grand total, all fields	11,987	12,689	12,684	12,842	12,868	13,055	13,052	12,744	12,449	12,370
	U.S. citizens, female									
Science and engineering, total	4,647	4,893	5,238	5,162	5,503	5,703	5,889	6,052	6,165	6,448
Engineering, total	249	248	279	283	296	343	374	415	411	370
Chemical	60	54	51	68	59	57	70	83	61	64
Civil	37	29	21	20	30	48	36	37	45	49
Electrical	29	45	44	55	57	64	79	82	74	66
Mechanical	19	23	34	23	33	32	28	45	46	41
Other engineering	104	97	129	117	117	142	161	168	185	150
Sciences, total	4,398	4,645	4,959	4,879	5,207	5,360	5,515	5,637	5,754	6,078
Physical sciences, total	402	422	412	447	446	453	519	467	470	507
Astronomy	11	16	7	13	20	20	21	31	25	23
Chemistry	342	352	336	357	352	345	409	333	349	388
Physics	48	47	66	73	71	86	87	101	92	89
Other physical sciences	1	7	3	4	3	2	2	2	4	7
Earth, atmospheric, & ocean sciences	114	118	148	138	112	125	112	114	142	146
Mathematics	93	82	93	97	124	122	132	105	138	170
Computer sciences	72	80	83	69	82	77	116	77	81	100
Biological sciences	1,190	1,233	1,290	1,329	1,449	1,492	1,488	1,585	1,627	1,669
Agricultural sciences	156	147	128	134	124	132	112	145	135	152
Psychology	1,537	1,724	1,847	1,724	1,869	1,909	1,990	2,105	2,031	2,144
Social sciences	834	839	958	941	1,001	1,050	1,046	1,039	1,130	1,190
Non-S&E, total	5,358	5,847	5,947	6,329	6,429	6,709	6,884	6,989	6,825	7,004
Health	522	500	558	606	653	678	675	686	699	773
Humanities[1]	1,140	1,319	1,369	1,483	1,575	1,649	1,808	1,872	1,857	1,927
Education	3,114	3,362	3,359	3,589	3,509	3,664	3,628	3,717	3,579	3,554
Professional/other	582	666	661	651	692	718	773	714	690	750
Grand total, all fields	10,005	10,740	11,185	11,491	11,932	12,412	12,773	13,041	12,990	13,452

See explanatory information, if any, and SOURCE at end of table

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, female, American Indian/Alaskan Native									
Science and engineering, total	20	18	19	27	18	24	25	33	35	42
Engineering, total	2	0	2	3	0	2	0	2	3	4
Chemical	0	0	1	0	0	0	0	0	1	3
Civil	1	0	0	1	0	0	0	1	1	0
Electrical	0	0	1	1	0	0	0	1	0	0
Mechanical	0	0	0	0	0	0	0	0	1	0
Other engineering	1	0	0	1	0	2	0	0	0	1
Sciences, total	18	18	17	24	18	22	25	31	32	38
Physical sciences, total	0	0	2	2	2	1	3	1	0	1
Astronomy	0	0	0	0	0	0	0	0	0	0
Chemistry	0	0	2	2	1	0	3	1	0	1
Physics	0	0	0	0	1	1	0	0	0	0
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	2	1	1	0	0	0	0	0	1	1
Mathematics	0	0	0	1	0	0	1	0	0	2
Computer sciences	1	0	0	0	1	1	0	2	1	0
Biological sciences	3	1	4	5	2	5	5	9	4	6
Agricultural sciences	1	0	0	0	0	0	0	3	0	2
Psychology	8	13	8	9	9	7	8	9	12	18
Social sciences	3	3	2	7	4	8	8	7	14	8
Non-S&E, total	25	27	37	40	42	48	42	51	54	43
Health	3	0	2	2	6	5	7	3	4	3
Humanities[1]	5	2	7	6	3	8	8	9	11	7
Education	15	21	26	30	30	27	24	38	33	24
Professional/other	2	4	2	2	3	8	3	1	6	9
Grand total, all fields	45	45	56	67	60	72	67	84	89	85
	U.S. citizens, female, Asian/Pacific Islander									
Science and engineering, total	123	129	192	201	233	244	321	324	370	352
Engineering, total	23	20	27	33	24	31	52	50	45	52
Chemical	9	7	7	7	4	7	11	10	3	9
Civil	2	1	1	1	0	0	2	6	3	3
Electrical	5	4	3	12	7	11	12	13	16	18
Mechanical	1	2	3	2	1	5	4	4	8	7
Other engineering	6	6	13	11	12	8	23	17	15	15
Sciences, total	100	109	165	168	209	213	269	274	325	300
Physical sciences, total	13	19	20	36	42	34	49	33	45	34
Astronomy	0	0	0	1	1	0	1	2	0	1
Chemistry	8	13	15	29	37	27	39	23	31	22
Physics	5	6	5	6	4	7	9	8	14	11
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	2	1	3	3	2	1	1	3	5	3
Mathematics	1	3	5	4	10	4	7	8	6	13
Computer sciences	4	1	7	3	4	4	8	9	11	10
Biological sciences	47	39	69	63	88	80	101	130	125	119
Agricultural sciences	3	2	3	5	4	2	5	7	5	1
Psychology	18	25	33	30	32	61	53	57	79	71
Social sciences	12	19	25	24	27	27	45	27	49	49
Non-S&E, total	64	85	114	116	105	115	149	153	185	172
Health	5	14	13	23	10	21	16	23	27	19
Humanities[1]	17	12	26	24	36	28	57	53	62	65
Education	34	48	59	58	51	53	55	61	75	64
Professional/other	8	11	16	11	8	13	21	16	21	24
Grand total, all fields	187	214	306	317	338	359	470	477	555	524

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, female, black									
Science and engineering, total	150	139	178	161	196	199	252	238	272	332
Engineering, total	3	5	8	6	11	13	13	19	22	21
Chemical	1	2	1	1	3	4	1	5	6	1
Civil	0	0	2	0	2	2	3	1	0	2
Electrical	0	1	2	2	2	3	4	5	3	4
Mechanical	0	0	1	0	0	1	0	3	1	0
Other engineering	2	2	2	3	4	3	5	5	12	14
Sciences, total	147	134	170	155	185	186	239	219	250	311
Physical sciences, total	7	6	4	5	9	12	17	12	9	25
Astronomy	0	0	0	1	0	0	0	0	1	0
Chemistry	7	6	4	4	8	8	16	10	7	22
Physics	0	0	0	0	0	4	1	2	1	3
Other physical sciences	0	0	0	0	1	0	0	0	0	0
Earth, atmospheric, & ocean sciences	1	2	1	1	0	1	0	2	2	3
Mathematics	2	1	4	0	1	3	1	2	2	7
Computer sciences	1	0	4	1	3	2	4	3	1	8
Biological sciences	23	21	26	22	30	43	39	36	57	65
Agricultural sciences	1	1	1	1	2	3	5	0	5	1
Psychology	61	69	84	76	74	72	108	107	108	111
Social sciences	51	34	46	49	66	50	65	57	66	91
Non-S&E, total	344	411	411	414	474	491	567	542	540	615
Health	20	18	22	24	37	30	41	32	39	47
Humanities[1]	34	34	47	42	38	52	54	60	68	68
Education	261	317	288	319	347	355	408	397	374	445
Professional/other	29	42	54	29	52	54	64	53	59	55
Grand total, all fields	494	550	589	575	670	690	819	780	812	947
	U.S. citizens, female, Hispanic									
Science and engineering, total	133	153	169	170	188	201	204	236	235	302
Engineering, total	6	6	10	11	11	5	10	13	21	13
Chemical	2	0	4	2	3	0	2	5	2	0
Civil	0	1	2	1	2	2	1	0	1	3
Electrical	1	1	0	2	3	0	1	3	6	2
Mechanical	1	1	2	2	0	1	0	0	3	1
Other engineering	2	3	2	4	3	2	6	5	9	7
Sciences, total	127	147	159	159	177	196	194	223	214	289
Physical sciences, total	15	22	10	15	16	17	19	9	12	10
Astronomy	0	0	0	1	0	0	2	0	1	0
Chemistry	15	20	8	11	14	13	14	6	10	9
Physics	0	2	2	3	2	4	3	3	1	1
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	2	4	1	4	2	2	3	4	4	5
Mathematics	4	3	3	3	1	3	3	0	5	7
Computer sciences	3	1	1	1	1	0	4	5	2	1
Biological sciences	15	28	35	35	46	50	36	51	57	71
Agricultural sciences	3	3	1	2	5	7	1	3	3	9
Psychology	60	53	66	70	78	86	94	116	101	144
Social sciences	25	33	42	29	28	31	34	35	30	42
Non-S&E, total	142	188	192	198	223	245	255	236	277	281
Health	7	15	8	8	15	17	14	20	22	25
Humanities[1]	36	60	56	47	67	62	63	70	79	68
Education	90	99	112	126	125	150	153	121	158	168
Professional/other	9	14	16	17	16	16	25	25	18	20
Grand total, all fields	275	341	361	368	411	446	459	472	512	583

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, female, Puerto Rican									
Science and engineering, total	39	48	47	49	42	59	63	68	73	103
Engineering, total	1	2	2	3	2	0	2	5	4	1
Chemical	0	0	1	0	0	0	1	2	0	0
Civil	0	0	0	0	1	0	0	0	0	0
Electrical	0	1	0	1	1	0	0	0	1	0
Mechanical	1	0	0	1	0	0	0	0	0	0
Other engineering	0	1	1	1	0	0	1	3	3	1
Sciences, total	38	46	45	46	40	59	61	63	69	102
Physical sciences, total	4	10	6	6	5	7	9	4	2	5
Astronomy	0	0	0	0	0	0	1	0	0	0
Chemistry	4	10	5	5	5	6	8	3	2	5
Physics	0	0	1	1	0	1	0	1	0	0
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	0	1	0	0	0	0	1	0	1	3
Mathematics	3	0	0	1	0	0	1	0	1	3
Computer sciences	0	0	0	0	1	0	0	1	0	1
Biological sciences	4	10	11	11	11	14	9	18	16	23
Agricultural sciences	2	1	0	0	3	3	0	1	1	1
Psychology	16	15	14	19	11	30	31	33	37	58
Social sciences	9	9	14	9	9	5	10	6	11	8
Non-S&E, total	51	58	60	70	69	75	86	69	85	71
Health	3	6	1	1	3	4	5	5	7	4
Humanities[1]	12	20	19	12	18	22	16	22	23	17
Education	35	30	36	53	45	45	50	34	49	44
Professional/other	1	2	4	4	3	4	15	8	6	6
Grand total, all fields	90	106	107	119	111	134	149	137	158	174
	U.S. citizens, female, Mexican American									
Science and engineering, total	34	35	41	38	42	54	59	53	65	83
Engineering, total	3	2	2	0	1	2	1	3	7	3
Chemical	1	0	1	0	0	0	1	1	1	0
Civil	0	1	0	0	0	0	0	0	1	1
Electrical	1	0	0	0	0	0	0	1	3	0
Mechanical	0	1	1	0	0	0	0	0	0	0
Other engineering	1	0	0	0	1	2	0	1	2	2
Sciences, total	31	33	39	38	41	52	58	50	58	80
Physical sciences, total	2	3	3	2	2	3	4	3	2	3
Astronomy	0	0	0	0	0	0	1	0	0	0
Chemistry	2	3	2	2	1	2	2	2	2	3
Physics	0	0	1	0	1	1	1	1	0	0
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	0	1	0	2	0	0	1	2	1	1
Mathematics	0	2	2	0	0	1	2	0	1	3
Computer sciences	0	0	0	0	0	0	2	0	0	0
Biological sciences	3	7	7	11	10	13	9	12	19	20
Agricultural sciences	0	0	0	1	1	1	1	1	0	3
Psychology	20	14	15	17	24	21	33	20	28	33
Social sciences	6	6	12	5	4	13	6	12	7	17
Non-S&E, total	35	35	55	52	71	86	69	70	72	113
Health	2	6	3	5	5	3	5	4	7	14
Humanities[1]	9	8	12	9	16	17	12	18	13	22
Education	23	19	37	32	44	63	51	41	48	70
Professional/other	1	2	3	6	6	3	1	7	4	7
Grand total, all fields	69	70	96	90	113	140	128	123	137	196

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens, female, other Hispanic									
Science and engineering, total	60	70	81	83	104	88	82	115	97	116
Engineering, total	2	2	6	8	8	3	7	5	10	9
Chemical	1	0	2	2	3	0	0	2	1	0
Civil	0	0	2	1	1	2	1	0	0	2
Electrical	0	0	0	1	2	0	1	2	2	2
Mechanical	0	0	1	1	0	1	0	0	3	1
Other engineering	1	2	1	3	2	0	5	1	4	4
Sciences, total	58	68	75	75	96	85	75	110	87	107
Physical sciences, total	9	9	1	7	9	7	6	2	8	2
Astronomy	0	0	0	1	0	0	0	0	1	0
Chemistry	9	7	1	4	8	5	4	1	6	1
Physics	0	2	0	2	1	2	2	1	1	1
Other physical sciences	0	0	0	0	0	0	0	0	0	0
Earth, atmospheric, & ocean sciences	2	2	1	2	2	2	1	2	2	1
Mathematics	1	1	1	2	1	2	0	0	3	1
Computer sciences	3	1	1	1	0	0	2	4	2	0
Biological sciences	8	11	17	13	25	23	18	21	22	28
Agricultural sciences	1	2	1	1	1	3	0	1	2	5
Psychology	24	24	37	34	43	35	30	63	36	53
Social sciences	10	18	16	15	15	13	18	17	12	17
Non-S&E, total	56	95	77	76	83	84	100	97	120	97
Health	2	3	4	2	7	10	4	11	8	7
Humanities[1]	15	32	25	26	33	23	35	30	43	29
Education	32	50	39	41	36	42	52	46	61	54
Professional/other	7	10	9	7	7	9	9	10	8	7
Grand total, all fields	116	165	158	159	187	172	182	212	217	213
	U.S. citizens, female, white									
Science and engineering, total	4,168	4,403	4,602	4,558	4,841	5,000	5,046	5,162	5,035	5,248
Engineering, total	212	216	221	227	248	291	296	324	310	275
Chemical	48	45	38	56	49	45	56	63	48	50
Civil	32	27	15	17	25	44	30	29	38	41
Electrical	23	39	33	38	45	50	59	60	46	42
Mechanical	17	19	27	19	31	25	24	37	32	32
Other engineering	92	86	108	97	98	127	127	135	146	110
Sciences, total	3,956	4,187	4,381	4,331	4,593	4,709	4,750	4,838	4,725	4,973
Physical sciences, total	365	368	372	382	375	387	425	406	388	429
Astronomy	11	16	6	10	19	19	18	29	22	22
Chemistry	310	307	305	307	291	296	332	290	289	327
Physics	43	39	58	61	63	70	73	85	73	73
Other physical sciences	1	6	3	4	2	2	2	2	4	7
Earth, atmospheric, & ocean sciences	107	109	137	130	108	120	106	104	124	133
Mathematics	83	74	79	88	111	111	119	93	120	137
Computer sciences	61	77	70	64	72	70	99	56	62	75
Biological sciences	1,087	1,133	1,140	1,196	1,274	1,305	1,301	1,344	1,344	1,376
Agricultural sciences	145	141	121	126	112	118	99	131	116	135
Psychology	1,374	1,540	1,636	1,521	1,670	1,672	1,712	1,806	1,640	1,719
Social sciences	734	745	826	824	871	926	889	898	931	969
Non-S&E, total	4,739	5,079	5,139	5,511	5,552	5,760	5,822	5,950	5,551	5,720
Health	484	450	505	543	584	596	585	599	596	664
Humanities[1]	1,031	1,198	1,219	1,353	1,423	1,488	1,612	1,659	1,584	1,666
Education	2,694	2,843	2,852	3,030	2,939	3,052	2,968	3,076	2,799	2,766
Professional/other	530	588	563	585	606	624	657	616	572	624
Grand total, all fields	8,907	9,482	9,741	10,069	10,393	10,760	10,868	11,112	10,586	10,968

See explanatory information, if any, and SOURCE at end of table.

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Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Non-U.S. citizens with permanent visas									
Science and engineering, total	1,124	1,197	1,285	1,383	1,641	3,021	3,509	3,007	2,277	2,016
Engineering, total	365	389	388	411	469	838	956	792	593	478
Chemical	62	50	51	60	53	87	90	74	88	46
Civil	59	61	40	51	59	89	103	93	78	51
Electrical	99	108	132	122	165	265	288	221	187	166
Mechanical	66	69	62	74	87	179	180	152	82	81
Other engineering	79	101	103	104	105	218	295	252	158	134
Sciences, total	759	808	897	972	1,172	2,183	2,553	2,215	1,684	1,538
Physical sciences, total	147	172	180	200	237	591	704	493	366	312
Astronomy	4	4	2	6	5	9	21	12	7	16
Chemistry	85	99	110	113	128	325	386	293	205	180
Physics	57	65	68	81	102	255	295	187	152	114
Other physical sciences	1	4	0	0	2	2	2	1	2	2
Earth, atmospheric, & ocean sciences	29	19	26	35	41	106	116	96	70	62
Mathematics	35	47	55	53	94	153	217	158	99	93
Computer sciences	58	55	63	67	84	117	132	92	91	84
Biological sciences	182	189	211	240	303	666	835	818	583	553
Agricultural sciences	45	57	56	62	49	97	106	103	83	79
Psychology	54	73	65	86	90	84	101	104	89	92
Social sciences	209	196	241	229	274	369	342	351	303	263
Non-S&E, total	502	501	572	597	618	726	810	758	651	680
Health	27	35	60	46	60	89	107	83	69	81
Humanities[1]	186	183	219	229	238	280	308	319	289	304
Education	164	153	174	165	177	199	218	196	164	171
Professional/other	125	130	119	157	143	158	177	160	129	124
Grand total, all fields	1,626	1,698	1,857	1,980	2,259	3,747	4,319	3,765	2,928	2,696
	Non-U.S. citizens with permanent visas, male									
Science and engineering, total	850	908	926	968	1,120	2,230	2,485	2,099	1,504	1,340
Engineering, total	339	361	351	366	417	733	810	684	495	401
Chemical	53	42	42	46	48	66	72	59	72	34
Civil	56	56	36	48	57	82	87	83	65	43
Electrical	92	106	128	110	142	241	247	198	155	141
Mechanical	66	68	59	72	84	157	159	137	73	72
Other engineering	72	89	86	90	86	187	245	207	130	111
Sciences, total	511	547	575	602	703	1,497	1,675	1,415	1,009	939
Physical sciences, total	112	124	138	133	162	419	515	350	251	220
Astronomy	2	2	2	4	2	8	17	8	6	11
Chemistry	62	68	78	69	79	206	258	187	125	110
Physics	47	50	58	60	79	204	239	154	120	97
Other physical sciences	1	4	0	0	2	1	1	1	0	2
Earth, atmospheric, & ocean sciences	23	19	17	26	33	87	84	80	52	39
Mathematics	27	36	36	33	54	124	166	118	65	66
Computer sciences	46	45	52	53	57	100	105	78	73	64
Biological sciences	96	110	111	131	168	415	463	462	301	313
Agricultural sciences	37	45	47	46	39	69	83	73	62	50
Psychology	28	25	22	30	21	26	35	26	27	32
Social sciences	142	143	152	150	169	257	224	228	178	155
Non-S&E, total	289	282	298	325	351	407	424	384	328	338
Health	18	18	31	23	34	45	62	45	33	37
Humanities[1]	83	80	97	104	116	141	138	146	132	149
Education	89	86	92	84	96	107	94	89	74	72
Professional/other	99	98	78	114	105	114	130	104	89	80
Grand total, all fields	1,139	1,190	1,224	1,293	1,471	2,637	2,909	2,483	1,832	1,678

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Non-U.S. citizens with permanent visas, female									
Science and engineering, total	274	289	359	415	521	791	1,024	908	773	676
Engineering, total	26	28	37	45	52	105	146	108	98	77
Chemical	9	8	9	14	5	21	18	15	16	12
Civil	3	5	4	3	2	7	16	10	13	8
Electrical	7	2	4	12	23	24	41	23	32	25
Mechanical	0	1	3	2	3	22	21	15	9	9
Other engineering	7	12	17	14	19	31	50	45	28	23
Sciences, total	248	261	322	370	469	686	878	800	675	599
Physical sciences, total	35	48	42	67	75	172	189	143	115	92
Astronomy	2	2	0	2	3	1	4	4	1	5
Chemistry	23	31	32	44	49	119	128	106	80	70
Physics	10	15	10	21	23	51	56	33	32	17
Other physical sciences	0	0	0	0	0	1	1	0	2	0
Earth, atmospheric, & ocean sciences	6	0	9	9	8	19	32	16	18	23
Mathematics	8	11	19	20	40	29	51	40	34	27
Computer sciences	12	10	11	14	27	17	27	14	18	20
Biological sciences	86	79	100	109	135	251	372	356	282	240
Agricultural sciences	8	12	9	16	10	28	23	30	21	29
Psychology	26	48	43	56	69	58	66	78	62	60
Social sciences	67	53	89	79	105	112	118	123	125	108
Non-S&E, total	213	219	274	272	267	319	386	374	323	342
Health	9	17	29	23	26	44	45	38	36	44
Humanities[1]	103	103	122	125	122	139	170	173	157	155
Education	75	67	82	81	81	92	124	107	90	99
Professional/other	26	32	41	43	38	44	47	56	40	44
Grand total, all fields	487	508	633	687	788	1,110	1,410	1,282	1,096	1,018
	Non-U.S. citizens with temporary visas									
Science and engineering, total	5,391	6,571	7,641	8,092	8,113	7,521	6,994	7,802	6,963	7,143
Engineering, total	1,940	2,277	2,633	2,743	2,784	2,653	2,524	2,716	2,391	2,392
Chemical	236	250	281	339	336	336	318	399	319	353
Civil	262	284	353	357	380	385	337	369	290	284
Electrical	498	602	690	725	703	735	712	749	666	660
Mechanical	358	465	493	538	554	459	437	430	425	427
Other engineering	586	676	816	784	811	738	720	769	691	668
Sciences, total	3,451	4,294	5,008	5,349	5,329	4,868	4,470	5,086	4,572	4,751
Physical sciences, total	890	1,073	1,257	1,346	1,263	1,107	930	1,139	1,017	1,113
Astronomy	26	30	37	28	34	32	28	42	34	45
Chemistry	461	530	689	729	675	597	493	613	561	610
Physics	401	507	525	581	550	471	399	481	421	454
Other physical sciences	2	6	6	8	4	7	10	3	1	4
Earth, atmospheric, & ocean sciences	122	171	185	236	235	197	173	205	211	200
Mathematics	346	424	506	511	517	448	382	441	416	419
Computer sciences	178	271	340	365	348	343	365	376	315	309
Biological sciences	608	853	1,059	1,159	1,246	1,058	969	1,240	1,219	1,230
Agricultural sciences	355	440	435	472	447	453	429	442	352	418
Psychology	106	117	133	156	148	151	164	181	128	151
Social sciences	846	945	1,093	1,104	1,125	1,111	1,058	1,062	914	911
Non-S&E, total	1,257	1,522	1,670	1,861	1,819	1,885	1,816	1,808	1,515	1,499
Health	134	166	171	226	214	230	245	267	253	239
Humanities[1]	283	354	444	495	466	529	548	522	465	456
Education	452	501	503	553	546	537	502	477	365	424
Professional/other	388	501	552	587	593	589	521	542	432	380
Grand total, all fields	6,648	8,093	9,311	9,953	9,932	9,406	8,810	9,610	8,478	8,642

See explanatory information, if any, and SOURCE at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of study of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Non-U.S. citizens with temporary visas, male									
Science and engineering, total	4,609	5,590	6,412	6,741	6,658	6,201	5,748	6,305	5,565	5,553
Engineering, total	1,850	2,157	2,484	2,574	2,623	2,475	2,365	2,488	2,194	2,144
Chemical	225	234	259	308	309	301	297	354	278	299
Civil	250	271	337	330	358	360	314	338	270	252
Electrical	469	573	659	679	660	679	668	697	631	610
Mechanical	349	452	473	518	535	445	424	414	398	400
Other engineering	557	627	756	739	761	690	662	685	617	583
Sciences, total	2,759	3,433	3,928	4,167	4,035	3,726	3,383	3,817	3,371	3,409
Physical sciences, total	743	895	1,041	1,098	1,015	908	770	930	817	854
Astronomy	22	28	30	24	32	28	24	36	25	29
Chemistry	355	421	547	556	503	440	378	465	423	420
Physics	365	441	460	510	477	433	360	427	369	403
Other physical sciences	1	5	4	8	3	7	8	2	0	2
Earth, atmospheric, & ocean sciences	109	153	165	198	202	158	151	169	178	161
Mathematics	299	363	420	427	422	364	304	358	345	344
Computer sciences	160	256	317	329	322	302	322	335	279	289
Biological sciences	400	582	694	787	809	704	635	799	748	738
Agricultural sciences	300	359	366	391	357	366	340	340	271	323
Psychology	60	62	77	81	64	71	79	87	55	62
Social sciences	688	763	848	856	844	853	782	799	678	638
Non-S&E, total	835	1,042	1,105	1,222	1,205	1,129	1,110	1,090	898	877
Health	87	101	101	159	138	115	142	151	128	132
Humanities[1]	171	211	255	280	275	294	309	280	257	234
Education	264	306	288	299	306	269	244	242	179	210
Professional/other	313	424	461	484	486	451	415	417	334	301
Grand total, all fields	5,444	6,632	7,517	7,963	7,863	7,330	6,858	7,395	6,463	6,430
	Non-U.S. citizens with temporary visas, female									
Science and engineering, total	782	981	1,229	1,351	1,455	1,320	1,246	1,497	1,398	1,590
Engineering, total	90	120	149	169	161	178	159	228	197	248
Chemical	11	16	22	31	27	35	21	45	41	54
Civil	12	13	16	27	22	25	23	31	20	32
Electrical	29	29	31	46	43	56	44	52	35	50
Mechanical	9	13	20	20	19	14	13	16	27	27
Other engineering	29	49	60	45	50	48	58	84	74	85
Sciences, total	692	861	1,080	1,182	1,294	1,142	1,087	1,269	1,201	1,342
Physical sciences, total	147	178	216	248	248	199	160	209	200	259
Astronomy	4	2	7	4	2	4	4	6	9	16
Chemistry	106	109	142	173	172	157	115	148	138	190
Physics	36	66	65	71	73	38	39	54	52	51
Other physical sciences	1	1	2	0	1	0	2	1	1	2
Earth, atmospheric, & ocean sciences	13	18	20	38	33	39	22	36	33	39
Mathematics	47	61	86	84	95	84	78	83	71	75
Computer sciences	18	15	23	36	26	41	43	41	36	20
Biological sciences	208	271	365	372	437	354	334	441	471	492
Agricultural sciences	55	81	69	81	90	87	89	102	81	95
Psychology	46	55	56	75	84	80	85	94	73	89
Social sciences	158	182	245	248	281	258	276	263	236	273
Non-S&E, total	422	480	565	639	614	756	706	718	617	622
Health	47	65	70	67	76	115	103	116	125	107
Humanities[1]	112	143	189	215	191	235	239	242	208	222
Education	188	195	215	254	240	268	258	235	186	214
Professional/other	75	77	91	103	107	138	106	125	98	79
Grand total, all fields	1,204	1,461	1,794	1,990	2,069	2,076	1,952	2,215	2,015	2,212

[1] Categories differ from those published by other Federal sponsors and the National Research Council in that linguistics, history of science, American studies, and archaeology are included not in humanities but in social science.

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Total									
Science and engineering, total	21,732	22,868	24,023	24,675	25,443	26,205	26,535	27,229	27,180	27,272
Engineering, total	4,543	4,894	5,214	5,438	5,698	5,822	6,008	6,305	6,098	5,919
Aeronautical/astronautical	178	192	207	234	228	230	252	287	270	242
Chemical	712	658	691	725	737	725	708	798	767	774
Civil	538	553	575	594	624	684	656	697	655	650
Electrical	1,137	1,276	1,405	1,483	1,543	1,673	1,731	1,740	1,718	1,593
Industrial	162	151	165	196	236	228	284	258	242	227
Materials/metallurgical	380	440	489	485	535	539	588	572	580	565
Mechanical	760	884	875	987	1,030	1,015	1,025	1,052	1,017	1,022
Other engineering	676	740	807	734	765	728	764	901	849	846
Sciences, total	17,189	17,974	18,809	19,237	19,745	20,383	20,527	20,924	21,082	21,353
Physical sciences, total	3,261	3,524	3,626	3,781	3,699	3,977	3,841	3,837	3,762	3,825
Astronomy	113	128	125	134	145	144	173	192	196	208
Chemistry	1,970	2,100	2,194	2,214	2,137	2,257	2,162	2,148	2,143	2,217
Physics	1,161	1,265	1,286	1,403	1,399	1,548	1,479	1,484	1,401	1,376
Other physical sciences	17	31	21	30	18	28	27	13	22	24
Earth, atmospheric, and ocean sciences	723	738	815	794	771	824	780	794	875	814
Mathematics	859	892	1,039	1,058	1,146	1,118	1,190	1,122	1,125	1,177
Computer sciences	612	705	800	869	880	903	997	921	905	923
Biological sciences	4,116	4,328	4,650	4,799	5,092	5,203	5,376	5,723	5,777	5,848
Agricultural sciences	1,086	1,174	1,073	1,063	968	1,078	1,036	1,037	978	1,035
Psychology	3,208	3,281	3,250	3,263	3,420	3,379	3,429	3,491	3,566	3,681
Social sciences	3,324	3,332	3,556	3,610	3,769	3,901	3,878	3,999	4,094	4,050
Non-S&E, total	12,595	13,199	13,511	14,215	14,358	14,829	15,208	15,185	15,375	15,411
Health	974	956	1,041	1,112	1,197	1,296	1,330	1,324	1,422	1,500
Humanities[1]	3,242	3,535	3,720	4,036	4,092	4,374	4,690	4,713	5,029	5,103
Education	6,281	6,510	6,454	6,677	6,689	6,708	6,649	6,772	6,549	6,559
Professional/other	2,098	2,198	2,296	2,390	2,380	2,451	2,539	2,376	2,375	2,249
Grand total, all fields	34,327	36,067	37,534	38,890	39,801	41,034	41,743	42,414	42,555	42,683

See explanatory information, if any, and SOURCE at end of table.

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Citizenship known									
Science and engineering, total	19,983	21,935	23,555	24,034	24,686	25,708	25,990	26,430	25,213	25,268
Engineering, total	4,169	4,623	5,107	5,263	5,481	5,706	5,866	6,099	5,694	5,413
Aeronautical/astronautical	166	176	205	215	219	226	247	277	260	217
Chemical	680	642	680	717	713	716	699	791	727	725
Civil	509	525	566	572	607	677	646	674	616	577
Electrical	1,037	1,201	1,376	1,444	1,498	1,634	1,683	1,675	1,599	1,457
Industrial	150	148	162	192	230	228	280	252	228	212
Materials/metallurgical	347	424	481	469	516	530	575	556	544	527
Mechanical	683	833	852	964	988	997	1,000	1,018	958	939
Other engineering	597	674	785	690	710	698	736	856	762	759
Sciences, total	15,814	17,312	18,448	18,771	19,205	20,002	20,124	20,331	19,519	19,855
Physical sciences, total	3,021	3,414	3,557	3,703	3,593	3,896	3,771	3,707	3,505	3,548
Astronomy	108	126	123	134	145	144	169	191	191	193
Chemistry	1,844	2,027	2,150	2,170	2,075	2,213	2,117	2,074	1,995	2,065
Physics	1,055	1,232	1,264	1,371	1,356	1,515	1,458	1,429	1,301	1,268
Other physical sciences	14	29	20	28	17	24	27	13	18	22
Earth, atmospheric, and ocean sciences	669	706	803	777	739	810	767	763	805	759
Mathematics	774	846	1,024	1,018	1,107	1,105	1,153	1,087	1,035	1,085
Computer sciences	574	674	791	854	857	886	981	889	828	860
Biological sciences	3,908	4,233	4,584	4,727	4,998	5,146	5,298	5,605	5,453	5,509
Agricultural sciences	1,006	1,127	1,055	1,045	953	1,069	1,027	1,018	901	958
Psychology	2,843	3,109	3,151	3,142	3,309	3,287	3,348	3,407	3,236	3,410
Social sciences	3,019	3,203	3,483	3,505	3,649	3,803	3,779	3,855	3,756	3,726
Non-S&E, total	11,692	12,761	13,186	13,909	13,954	14,592	14,879	14,686	14,127	14,288
Health	890	922	1,010	1,081	1,153	1,280	1,290	1,283	1,271	1,355
Humanities[1]	2,999	3,436	3,638	3,935	3,978	4,295	4,603	4,567	4,661	4,744
Education	5,862	6,288	6,291	6,570	6,514	6,600	6,497	6,539	6,077	6,124
Professional/other	1,941	2,115	2,247	2,323	2,309	2,417	2,489	2,297	2,118	2,065
Grand total, all fields	31,675	34,696	36,741	37,943	38,640	40,300	40,869	41,116	39,340	39,556

See explanatory information, if any, and SOURCE at end of table

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens									
Science and engineering, total	13,468	14,167	14,629	14,559	14,932	15,166	15,487	15,621	15,973	16,109
Engineering, total	1,864	1,957	2,086	2,109	2,228	2,215	2,386	2,591	2,710	2,543
Aeronautical/astronautical	74	82	103	95	114	110	140	166	153	138
Chemical	382	342	348	318	324	293	291	318	320	326
Civil	188	180	173	164	168	203	206	212	248	242
Electrical	440	491	554	597	630	634	683	705	746	631
Industrial	51	56	50	54	89	89	108	107	100	82
Materials/metallurgical	173	190	211	202	228	218	238	244	270	265
Mechanical	259	299	297	352	347	359	383	436	451	431
Other engineering	297	317	350	327	328	309	337	403	422	428
Sciences, total	11,604	12,210	12,543	12,450	12,704	12,951	13,101	13,030	13,263	13,566
Physical sciences, total	1,984	2,169	2,120	2,157	2,093	2,198	2,137	2,075	2,122	2,123
Astronomy	78	92	84	100	106	103	120	137	150	132
Chemistry	1,298	1,398	1,351	1,328	1,272	1,291	1,238	1,168	1,229	1,275
Physics	597	660	671	709	704	789	764	761	728	700
Other physical sciences	11	19	14	20	11	15	15	9	15	16
Earth, atmospheric, and ocean sciences	518	516	592	506	463	507	478	462	524	497
Mathematics	393	375	463	454	496	504	554	488	520	573
Computer sciences	338	348	388	422	425	426	484	421	422	467
Biological sciences	3,118	3,191	3,314	3,328	3,449	3,422	3,494	3,547	3,651	3,726
Agricultural sciences	606	630	564	511	457	519	492	473	466	461
Psychology	2,683	2,919	2,953	2,900	3,071	3,052	3,083	3,122	3,019	3,167
Social sciences	1,964	2,062	2,149	2,172	2,250	2,323	2,379	2,442	2,539	2,552
Non-S&E, total	9,933	10,738	10,944	11,451	11,517	11,981	12,253	12,120	11,961	12,109
Health	729	721	779	809	879	961	938	933	949	1,035
Humanities[1]	2,530	2,899	2,975	3,211	3,274	3,486	3,747	3,726	3,907	3,984
Education	5,246	5,634	5,614	5,852	5,791	5,864	5,777	5,866	5,548	5,529
Professional/other	1,428	1,484	1,576	1,579	1,573	1,670	1,791	1,595	1,557	1,561
Grand total, all fields	23,401	24,905	25,573	26,010	26,449	27,147	27,740	27,741	27,934	28,218

See explanatory information, if any, and SOURCE at end of table.

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Non-U.S. citizens									
Science and engineering, total	6,515	7,768	8,926	9,475	9,754	10,542	10,503	10,809	9,240	9,159
Engineering, total	2,305	2,666	3,021	3,154	3,253	3,491	3,480	3,508	2,984	2,870
Aeronautical/astronautical	92	94	102	120	105	116	107	111	107	79
Chemical	298	300	332	399	389	423	408	473	407	399
Civil	321	345	393	408	439	474	440	462	368	335
Electrical	597	710	822	847	868	1,000	1,000	970	853	826
Industrial	99	92	112	138	141	139	172	145	128	130
Materials/metallurgical	174	234	270	267	288	312	337	312	274	262
Mechanical	424	534	555	612	641	638	617	582	507	508
Other engineering	300	357	435	363	382	389	399	453	340	331
Sciences, total	4,210	5,102	5,905	6,321	6,501	7,051	7,023	7,301	6,256	6,289
Physical sciences, total	1,037	1,245	1,437	1,546	1,500	1,698	1,634	1,632	1,383	1,425
Astronomy	30	34	39	34	39	41	49	54	41	61
Chemistry	546	629	799	842	803	922	879	906	766	790
Physics	458	572	593	662	652	726	694	668	573	568
Other physical sciences	3	10	6	8	6	9	12	4	3	6
Earth, atmospheric, and ocean sciences	151	190	211	271	276	303	289	301	281	262
Mathematics	381	471	561	564	611	601	599	599	515	512
Computer sciences	236	326	403	432	432	460	497	468	406	393
Biological sciences	790	1,042	1,270	1,399	1,549	1,724	1,804	2,058	1,802	1,783
Agricultural sciences	400	497	491	534	496	550	535	545	435	497
Psychology	160	190	198	242	238	235	265	285	217	243
Social sciences	1,055	1,141	1,334	1,333	1,399	1,480	1,400	1,413	1,217	1,174
Non-S&E, total	1,759	2,023	2,242	2,458	2,437	2,611	2,626	2,566	2,168	2,179
Health	161	201	231	272	274	319	352	350	322	320
Humanities[1]	469	537	663	724	704	809	856	841	754	760
Education	616	654	677	718	723	736	720	673	529	595
Professional/other	513	631	671	744	736	747	698	702	561	504
Grand total, all fields	8,274	9,791	11,168	11,933	12,191	13,153	13,129	13,375	11,406	11,338

See explanatory information, if any, and SOURCE at end of table.

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Non-U.S. citizens with permanent visas									
Science and engineering, total	1,124	1,197	1,285	1,383	1,641	3,021	3,509	3,007	2,277	2,016
Engineering, total	365	389	388	411	469	838	956	792	593	478
Aeronautical/astronautical	8	8	11	8	6	20	13	18	13	13
Chemical	62	50	51	60	53	87	90	74	88	46
Civil	59	61	40	51	59	89	103	93	78	51
Electrical	99	108	132	122	165	265	288	221	187	166
Industrial	8	13	18	20	16	30	41	29	17	17
Materials/metallurgical	21	26	29	34	39	79	114	92	44	48
Mechanical	66	69	62	74	87	179	180	152	82	81
Other engineering	42	54	45	42	44	89	127	113	84	56
Sciences, total	759	808	897	972	1,172	2,183	2,553	2,215	1,684	1,538
Physical sciences, total	147	172	180	200	237	591	704	493	366	312
Astronomy	4	4	2	6	5	9	21	12	7	16
Chemistry	85	99	110	113	128	325	386	293	205	180
Physics	57	65	68	81	102	255	295	187	152	114
Other physical sciences	1	4	0	0	2	2	2	1	2	2
Earth, atmospheric, and ocean sciences	29	19	26	35	41	106	116	96	70	62
Mathematics	35	47	55	53	94	153	217	158	99	93
Computer sciences	58	55	63	67	84	117	132	92	91	84
Biological sciences	182	189	211	240	303	666	835	818	583	553
Agricultural sciences	45	57	56	62	49	97	106	103	83	79
Psychology	54	73	65	86	90	84	101	104	89	92
Social sciences	209	196	241	229	274	369	342	351	303	263
Non-S&E, total	502	501	572	597	618	726	810	758	651	680
Health	27	35	60	46	60	89	107	83	69	81
Humanities[1]	186	183	219	229	238	280	308	319	289	304
Education	164	153	174	165	177	199	218	196	164	171
Professional/other	125	130	119	157	143	158	177	160	129	124
Grand total, all fields	1,626	1,698	1,857	1,980	2,259	3,747	4,319	3,765	2,928	2,696

See explanatory information, if any, and SOURCE at end of table.

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Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Non-U.S. citizens with temporary visas									
Science and engineering, total	5,391	6,571	7,641	8,092	8,113	7,521	6,994	7,802	6,963	7,143
Engineering, total	1,940	2,277	2,633	2,743	2,784	2,653	2,524	2,716	2,391	2,392
Aeronautical/astronautical	84	86	91	112	99	96	94	93	94	66
Chemical	236	250	281	339	336	336	318	399	319	353
Civil	262	284	353	357	380	385	337	369	290	284
Electrical	498	602	690	725	703	735	712	749	666	660
Industrial	91	79	94	118	125	109	131	116	111	113
Materials/metallurgical	153	208	241	233	249	233	223	220	230	214
Mechanical	358	465	493	538	554	459	437	430	425	427
Other engineering	258	303	390	321	338	300	272	340	256	275
Sciences, total	3,451	4,294	5,008	5,349	5,329	4,868	4,470	5,086	4,572	4,751
Physical sciences, total	890	1,073	1,257	1,346	1,263	1,107	930	1,139	1,017	1,113
Astronomy	26	30	37	28	34	32	28	42	34	45
Chemistry	461	530	689	729	675	597	493	613	561	610
Physics	401	507	525	581	550	471	399	481	421	454
Other physical sciences	2	6	6	8	4	7	10	3	1	4
Earth, atmospheric, and ocean sciences	122	171	185	236	235	197	173	205	211	200
Mathematics	346	424	506	511	517	448	382	441	416	419
Computer sciences	178	271	340	365	348	343	365	376	315	309
Biological sciences	608	853	1,059	1,159	1,246	1,058	969	1,240	1,219	1,230
Agricultural sciences	355	440	435	472	447	453	429	442	352	418
Psychology	106	117	133	156	148	151	164	181	128	151
Social sciences	846	945	1,093	1,104	1,125	1,111	1,058	1,062	914	911
Non-S&E, total	1,257	1,522	1,670	1,861	1,819	1,885	1,816	1,808	1,515	1,499
Health	134	166	171	226	214	230	245	267	253	239
Humanities[1]	283	354	444	495	466	529	548	522	465	456
Education	452	501	503	553	546	537	502	477	365	424
Professional/other	388	501	552	587	593	589	521	542	432	380
Grand total, all fields	6,648	8,093	9,311	9,953	9,932	9,406	8,810	9,610	8,478	8,642

See explanatory information, if any, and SOURCE at end of table.

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Citizenship unknown									
Science and engineering, total	1,749	933	468	641	757	497	545	799	1,967	2,004
Engineering, total	374	271	107	175	217	116	142	206	404	506
Aeronautical/astronautical	12	16	2	19	9	4	5	10	10	25
Chemical	32	16	11	8	24	9	9	7	40	49
Civil	29	28	9	22	17	7	10	23	39	73
Electrical	100	75	29	39	45	39	48	65	119	136
Industrial	12	3	3	4	6	0	4	6	14	15
Materials/metallurgical	33	16	8	16	19	9	13	16	36	38
Mechanical	77	51	23	23	42	18	25	34	59	83
Other engineering	79	66	22	44	55	30	28	45	87	87
Sciences, total	1,375	662	361	466	540	381	403	593	1,563	1,498
Physical sciences, total	240	110	69	78	106	81	70	130	257	277
Astronomy	5	2	2	0	0	0	4	1	5	15
Chemistry	126	73	44	44	62	44	45	74	148	152
Physics	106	33	22	32	43	33	21	55	100	108
Other physical sciences	3	2	1	2	1	4	0	0	4	2
Earth, atmospheric, and ocean sciences	54	32	12	17	32	14	13	31	70	55
Mathematics	85	46	15	40	39	13	37	35	90	92
Computer sciences	38	31	9	15	23	17	16	32	77	63
Biological sciences	208	95	66	72	94	57	78	118	324	339
Agricultural sciences	80	47	18	18	15	9	9	19	77	77
Psychology	365	172	99	121	111	92	81	84	330	271
Social sciences	305	129	73	105	120	98	99	144	338	324
Non-S&E, total	903	438	325	306	404	237	329	499	1,248	1,123
Health	84	34	31	31	44	16	40	41	151	145
Humanities[1]	243	99	82	101	114	79	87	146	368	359
Education	419	222	163	107	175	108	152	233	472	435
Professional/other	157	83	49	67	71	34	50	79	257	184
Grand total, all fields	2,652	1,371	793	947	1,161	734	874	1,298	3,215	3,127

[1] Categories differ from those published by other Federal sponsors and the National Research Council in that linguistics, history of science, American studies, and archaeology are included not in humanities but in social science.

SOURCE: National Science Foundation/Science Resources Studies, Survey of Earned Doctorates

Table 4a. Percentage distribution of science and engineering doctorates awarded, by major field and citizenship status of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Total									
Science and engineering, total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Engineering, total	20.9	21.4	21.7	22.0	22.4	22.2	22.6	23.2	22.4	21.7
Aeronautical/astronautical	.8	.8	.9	.9	.9	.9	.9	1.1	1.0	.9
Chemical	3.3	2.9	2.9	2.9	2.9	2.8	2.7	2.9	2.8	2.8
Civil	2.5	2.4	2.4	2.4	2.5	2.6	2.5	2.6	2.4	2.4
Electrical	5.2	5.6	5.8	6.0	6.1	6.4	6.5	6.4	6.3	5.8
Industrial	.7	.7	.7	.8	.9	.9	1.1	.9	.9	.8
Materials/metallurgical	1.7	1.9	2.0	2.0	2.1	2.1	2.2	2.1	2.1	2.1
Mechanical	3.5	3.9	3.6	4.0	4.0	3.9	3.9	3.9	3.7	3.7
Other engineering	3.1	3.2	3.4	3.0	3.0	2.8	2.9	3.3	3.1	3.1
Sciences, total	79.1	78.6	78.3	78.0	77.6	77.8	77.4	76.8	77.6	78.3
Physical sciences, total	15.0	15.4	15.1	15.3	14.5	15.2	14.5	14.1	13.8	14.0
Astronomy	.5	.6	.5	.5	.6	.5	.7	.7	.7	.8
Chemistry	9.1	9.2	9.1	9.0	8.4	8.6	8.1	7.9	7.9	8.1
Physics	5.3	5.5	5.4	5.7	5.5	5.9	5.6	5.5	5.2	5.0
Other physical sciences	.1	.1	.1	.1	.1	.1	.1	.0	.1	.1
Earth, atmospheric, and ocean sciences	3.3	3.2	3.4	3.2	3.0	3.1	2.9	2.9	3.2	3.0
Mathematics	4.0	3.9	4.3	4.3	4.5	4.3	4.5	4.1	4.1	4.3
Computer sciences	2.8	3.1	3.3	3.5	3.5	3.4	3.8	3.4	3.3	3.4
Biological sciences	18.9	18.9	19.4	19.4	20.0	19.9	20.3	21.0	21.3	21.4
Agricultural sciences	5.0	5.1	4.5	4.3	3.8	4.1	3.9	3.8	3.6	3.8
Psychology	14.8	14.3	13.5	13.2	13.4	12.9	12.9	12.8	13.1	13.5
Social sciences	15.3	14.6	14.8	14.6	14.8	14.9	14.6	14.7	15.1	14.9
	Citizenship known									
Science and engineering, total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Engineering, total	20.9	21.1	21.7	21.9	22.2	22.2	22.6	23.1	22.6	21.4
Aeronautical/astronautical	.8	.8	.9	.9	.9	.9	1.0	1.0	1.0	.9
Chemical	3.4	2.9	2.9	3.0	2.9	2.8	2.7	3.0	2.9	2.9
Civil	2.5	2.4	2.4	2.4	2.5	2.6	2.5	2.6	2.4	2.3
Electrical	5.2	5.5	5.8	6.0	6.1	6.4	6.5	6.3	6.3	5.8
Industrial	.8	.7	.7	.8	.9	.9	1.1	1.0	.9	.8
Materials/metallurgical	1.7	1.9	2.0	2.0	2.1	2.1	2.2	2.1	2.2	2.1
Mechanical	3.4	3.8	3.6	4.0	4.0	3.9	3.8	3.9	3.8	3.7
Other engineering	3.0	3.1	3.3	2.9	2.9	2.7	2.8	3.2	3.0	3.0
Sciences, total	79.1	78.9	78.3	78.1	77.8	77.8	77.4	76.9	77.4	78.6
Physical sciences, total	15.1	15.6	15.1	15.4	14.6	15.2	14.5	14.0	13.9	14.0
Astronomy	.5	.6	.5	.6	.6	.6	.7	.7	.8	.8
Chemistry	9.2	9.2	9.1	9.0	8.4	8.6	8.1	7.8	7.9	8.2
Physics	5.3	5.6	5.4	5.7	5.5	5.9	5.6	5.4	5.2	5.0
Other physical sciences	.1	.1	.1	.1	.1	.1	.1	.0	.1	.1
Earth, atmospheric, and ocean sciences	3.3	3.2	3.4	3.2	3.0	3.2	3.0	2.9	3.2	3.0
Mathematics	3.9	3.9	4.3	4.2	4.5	4.3	4.4	4.1	4.1	4.3
Computer sciences	2.9	3.1	3.4	3.6	3.5	3.4	3.8	3.4	3.3	3.4
Biological sciences	19.6	19.3	19.5	19.7	20.2	20.0	20.4	21.2	21.6	21.8
Agricultural sciences	5.0	5.1	4.5	4.3	3.9	4.2	4.0	3.9	3.6	3.8
Psychology	14.2	14.2	13.4	13.1	13.4	12.8	12.9	12.9	12.8	13.5
Social sciences	15.1	14.6	14.8	14.6	14.8	14.8	14.5	14.6	14.9	14.7

See explanatory information, if any, and SOURCE at end of table

Table 4a. Percentage distribution of science and engineering doctorates awarded, by major field and citizenship status of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	U.S. citizens									
Science and engineering, total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Engineering, total	13.8	13.8	14.3	14.5	14.9	14.6	15.4	16.6	17.0	15.8
Aeronautical/astronautical	.5	.6	.7	.7	.8	.7	.9	1.1	1.0	.9
Chemical	2.8	2.4	2.4	2.2	2.2	1.9	1.9	2.0	2.0	2.0
Civil	1.4	1.3	1.2	1.1	1.1	1.3	1.3	1.4	1.6	1.5
Electrical	3.3	3.5	3.8	4.1	4.2	4.2	4.4	4.5	4.7	3.9
Industrial	.4	.4	.3	.4	.6	.6	.7	.7	.6	.5
Materials/metallurgical	1.3	1.3	1.4	1.4	1.5	1.4	1.5	1.6	1.7	1.6
Mechanical	1.9	2.1	2.0	2.4	2.3	2.4	2.5	2.8	2.8	2.7
Other engineering	2.2	2.2	2.4	2.2	2.2	2.0	2.2	2.6	2.6	2.7
Sciences, total	86.2	86.2	85.7	85.5	85.1	85.4	84.6	83.4	83.0	84.2
Physical sciences, total	14.7	15.3	14.5	14.8	14.0	14.5	13.8	13.3	13.3	13.2
Astronomy	.6	.6	.6	.7	.7	.7	.8	.9	.9	.8
Chemistry	9.6	9.9	9.2	9.1	8.5	8.5	8.0	7.5	7.7	7.9
Physics	4.4	4.7	4.6	4.9	4.7	5.2	4.9	4.9	4.6	4.3
Other physical sciences	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
Earth, atmospheric, and ocean sciences	3.8	3.6	4.0	3.5	3.1	3.3	3.1	3.0	3.3	3.1
Mathematics	2.9	2.6	3.2	3.1	3.3	3.3	3.6	3.1	3.3	3.6
Computer sciences	2.5	2.5	2.7	2.9	2.8	2.8	3.1	2.7	2.6	2.9
Biological sciences	23.2	22.5	22.7	22.9	23.1	22.6	22.6	22.7	22.9	23.1
Agricultural sciences	4.5	4.4	3.9	3.5	3.1	3.4	3.2	3.0	2.9	2.9
Psychology	19.9	20.6	20.2	19.9	20.6	20.1	19.9	20.0	18.9	19.7
Social sciences	14.6	14.6	14.7	14.9	15.1	15.3	15.4	15.6	15.9	15.8
	Non-U.S. citizens									
Science and engineering, total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Engineering, total	35.4	34.3	33.8	33.3	33.4	33.1	33.1	32.5	32.3	31.3
Aeronautical/astronautical	1.4	1.2	1.1	1.3	1.1	1.1	1.0	1.0	1.2	.9
Chemical	4.6	3.9	3.7	4.2	4.0	4.0	3.9	4.4	4.4	4.4
Civil	4.9	4.4	4.4	4.3	4.5	4.5	4.2	4.3	4.0	3.7
Electrical	9.2	9.1	9.2	8.9	8.9	9.5	9.5	9.0	9.2	9.0
Industrial	1.5	1.2	1.3	1.5	1.4	1.3	1.6	1.3	1.4	1.4
Materials/metallurgical	2.7	3.0	3.0	2.8	3.0	3.0	3.2	2.9	3.0	2.9
Mechanical	6.5	6.9	6.2	6.5	6.6	6.1	5.9	5.4	5.5	5.5
Other engineering	4.6	4.6	4.9	3.8	3.9	3.7	3.8	4.2	3.7	3.6
Sciences, total	64.6	65.7	66.2	66.7	66.6	66.9	66.9	67.5	67.7	68.7
Physical sciences, total	15.9	16.0	16.1	16.3	15.4	16.1	15.6	15.1	15.0	15.6
Astronomy	.5	.4	.4	.4	.4	.4	.5	.5	.4	.7
Chemistry	8.4	8.1	9.0	8.9	8.2	8.7	8.4	8.4	8.3	8.6
Physics	7.0	7.4	6.6	7.0	6.7	6.9	6.6	6.2	6.2	6.2
Other physical sciences	.0	.1	.1	.1	.1	.1	.1	.0	.0	.1
Earth, atmospheric, and ocean sciences	2.3	2.4	2.4	2.9	2.8	2.9	2.8	2.8	3.0	2.9
Mathematics	5.8	6.1	6.3	6.0	6.3	5.7	5.7	5.5	5.6	5.6
Computer sciences	3.6	4.2	4.5	4.6	4.4	4.4	4.7	4.3	4.4	4.3
Biological sciences	12.1	13.4	14.2	14.8	15.9	16.4	17.2	19.0	19.5	19.5
Agricultural sciences	6.1	6.4	5.5	5.6	5.1	5.2	5.1	5.0	4.7	5.4
Psychology	2.5	2.4	2.2	2.6	2.4	2.2	2.5	2.6	2.3	2.7
Social sciences	16.2	14.7	14.9	14.1	14.3	14.0	13.3	13.1	13.2	12.8

See explanatory information, if any, and SOURCE at end of table.

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Table 4a. Percentage distribution of science and engineering doctorates awarded, by major field and citizenship status of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Non-U.S. citizens with permanent visas									
Science and engineering, total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Engineering, total	32.5	32.5	30.2	29.7	28.6	27.7	27.2	26.3	26.0	23.7
Aeronautical/astronautical	.7	.7	.9	.6	.4	.7	.4	.6	.6	.6
Chemical	5.5	4.2	4.0	4.3	3.2	2.9	2.6	2.5	3.9	2.3
Civil	5.2	5.1	3.1	3.7	3.6	2.9	2.9	3.1	3.4	2.5
Electrical	8.8	9.0	10.3	8.8	10.1	8.8	8.2	7.3	8.2	8.2
Industrial	.7	1.1	1.4	1.4	1.0	1.0	1.2	1.0	.7	.8
Materials/metallurgical	1.9	2.2	2.3	2.5	2.4	2.6	3.2	3.1	1.9	2.4
Mechanical	5.9	5.8	4.8	5.4	5.3	5.9	5.1	5.1	3.6	4.0
Other engineering	3.7	4.5	3.5	3.0	2.7	2.9	3.6	3.8	3.7	2.8
Sciences, total	67.5	67.5	69.8	70.3	71.4	72.3	72.8	73.7	74.0	76.3
Physical sciences, total	13.1	14.4	14.0	14.5	14.4	19.6	20.1	16.4	16.1	15.5
Astronomy	.4	.3	.2	.4	.3	.3	.6	.4	.3	.8
Chemistry	7.6	9.3	8.6	8.2	7.8	10.8	11.0	9.7	9.0	8.9
Physics	5.1	5.4	5.3	5.9	6.2	8.4	8.4	6.2	6.7	5.7
Other physical sciences	.1	.3	.0	.0	.1	.1	.1	.0	.1	.1
Earth, atmospheric, and ocean sciences	2.6	1.6	2.0	2.5	2.5	3.5	3.3	3.2	3.1	3.1
Mathematics	3.1	3.9	4.3	3.8	5.7	5.1	6.2	5.3	4.3	4.6
Computer sciences	5.2	4.6	4.9	4.8	5.1	3.9	3.8	3.1	4.0	4.2
Biological sciences	16.2	15.8	16.4	17.4	18.5	22.0	23.8	27.2	25.6	27.4
Agricultural sciences	4.0	4.8	4.4	4.5	3.0	3.2	3.0	3.4	3.6	3.9
Psychology	4.8	6.1	5.1	6.2	5.5	2.8	2.9	3.5	3.9	4.6
Social sciences	18.6	16.4	18.8	16.6	16.7	12.2	9.7	11.7	13.3	13.0
	Non-U.S. citizens with temporary visas									
Science and engineering, total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Engineering, total	36.0	34.7	34.5	33.9	34.3	35.3	36.1	34.8	34.3	33.5
Aeronautical/astronautical	1.6	1.3	1.2	1.4	1.2	1.3	1.3	1.2	1.3	.9
Chemical	4.4	3.8	3.7	4.2	4.1	4.5	4.5	5.1	4.6	4.9
Civil	4.9	4.3	4.6	4.4	4.7	5.1	4.8	4.7	4.2	4.0
Electrical	9.2	9.2	9.0	9.0	8.7	9.8	10.2	9.6	9.6	9.2
Industrial	1.7	1.2	1.2	1.5	1.5	1.4	1.9	1.5	1.6	1.6
Materials/metallurgical	2.8	3.2	3.2	2.9	3.1	3.1	3.2	2.8	3.3	3.0
Mechanical	6.6	7.1	6.5	6.6	6.8	6.1	6.2	5.5	6.1	6.0
Other engineering	4.8	4.6	5.1	4.0	4.2	4.0	3.9	4.4	3.7	3.8
Sciences, total	64.0	65.3	65.5	66.1	65.7	64.7	63.9	65.2	65.7	66.5
Physical sciences, total	16.5	16.3	16.5	16.6	15.6	14.7	13.3	14.6	14.6	15.6
Astronomy	.5	.5	.5	.3	.4	.4	.4	.5	.5	.6
Chemistry	8.6	8.1	9.0	9.0	8.3	7.9	7.0	7.9	8.1	8.5
Physics	7.4	7.7	6.9	7.2	6.8	6.3	5.7	6.2	6.0	6.4
Other physical sciences	.0	.1	.1	.1	.0	.1	.1	.0	.0	.1
Earth, atmospheric, and ocean sciences	2.3	2.6	2.4	2.9	2.9	2.6	2.5	2.6	3.0	2.8
Mathematics	6.4	6.5	6.6	6.3	6.4	6.0	5.5	5.7	6.0	5.9
Computer sciences	3.3	4.1	4.4	4.5	4.3	4.6	5.2	4.8	4.5	4.3
Biological sciences	11.3	13.0	13.9	14.3	15.4	14.1	13.9	15.9	17.5	17.2
Agricultural sciences	6.6	6.7	5.7	5.8	5.5	6.0	6.1	5.7	5.1	5.9
Psychology	2.0	1.8	1.7	1.9	1.8	2.0	2.3	2.3	1.8	2.1
Social sciences	15.7	14.4	14.3	13.6	13.9	14.8	15.1	13.6	13.1	12.8

See explanatory information, if any, and SOURCE at end of table.

Table 4a. Percentage distribution of science and engineering doctorates awarded, by major field and citizenship status of recipients: 1989-98

Field of study	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Citizenship unknown									
Science and engineering, total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Engineering, total	21.4	29.0	22.9	27.3	28.7	23.3	26.1	25.8	20.5	25.2
Aeronautical/astronautical	.7	1.7	.4	3.0	1.2	.8	.9	1.3	.5	1.2
Chemical	1.8	1.7	2.4	1.2	3.2	1.8	1.7	.9	2.0	2.4
Civil	1.7	3.0	1.9	3.4	2.2	1.4	1.8	2.9	2.0	3.6
Electrical	5.7	8.0	6.2	6.1	5.9	7.8	8.8	8.1	6.0	6.8
Industrial	.7	.3	.6	.6	.8	.0	.7	.8	.7	.7
Materials/metallurgical	1.9	1.7	1.7	2.5	2.5	1.8	2.4	2.0	1.8	1.9
Mechanical	4.4	5.5	4.9	3.6	5.5	3.6	4.6	4.3	3.0	4.1
Other engineering	4.5	7.1	4.7	6.9	7.3	6.0	5.1	5.6	4.4	4.3
Sciences, total	78.6	71.0	77.1	72.7	71.3	76.7	73.9	74.2	79.5	74.8
Physical sciences, total	13.7	11.8	14.7	12.2	14.0	16.3	12.8	16.3	13.1	13.8
Astronomy	.3	.2	.4	.0	.0	.0	.7	.1	.3	.7
Chemistry	7.2	7.8	9.4	6.9	8.2	8.9	8.3	9.3	7.5	7.6
Physics	6.1	3.5	4.7	5.0	5.7	6.6	3.9	6.9	5.1	5.4
Other physical sciences	.2	.2	.2	.3	.1	.8	.0	.0	.2	.1
Earth, atmospheric, and ocean sciences	3.1	3.4	2.6	2.7	4.2	2.8	2.4	3.9	3.6	2.7
Mathematics	4.9	4.9	3.2	6.2	5.2	2.6	6.8	4.4	4.6	4.6
Computer sciences	2.2	3.3	1.9	2.3	3.0	3.4	2.9	4.0	3.9	3.1
Biological sciences	11.9	10.2	14.1	11.2	12.4	11.5	14.3	14.8	16.5	16.9
Agricultural sciences	4.6	5.0	3.8	2.8	2.0	1.8	1.7	2.4	3.9	3.8
Psychology	20.9	18.4	21.2	18.9	14.7	18.5	14.9	10.5	16.8	13.5
Social sciences	17.4	13.8	15.6	16.4	15.9	19.7	18.2	18.0	17.2	16.2

SOURCE: National Science Foundation/Science Resources Studies, Survey of Earned Doctorates

Table 5. Non-U.S. citizens awarded science and engineering (S&E) doctorates, by country of citizenship, visa type, and year of doctorate: 1989-98

Country of citizenship	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Total non-U.S. citizens, S&E									
Total foreign citizenship	6,515	7,768	8,926	9,475	9,754	10,542	10,503	10,809	9,240	9,159
North America, total	403	446	525	515	506	547	505	530	455	527
Canada	220	253	297	304	285	275	274	276	243	268
Caribbean	29	36	54	44	38	61	60	51	45	60
Central America	34	53	46	52	44	69	43	45	34	38
Mexico	120	104	128	115	139	142	128	158	133	161
South America, total	297	343	387	394	394	406	359	455	372	405
Argentina	43	65	62	86	53	56	49	66	67	71
Brazil	100	100	119	133	151	157	137	205	136	150
Chile	47	50	54	48	52	42	38	36	27	23
Colombia	27	40	49	37	35	48	45	42	33	25
South America, other	80	88	103	90	103	105	90	106	104	136
Europe, total	709	801	972	950	1,104	1,150	1,254	1,258	1,245	1,461
Belgium	15	31	43	42	24	21	32	25	17	17
England, United Kingdom	96	100	132	137	154	128	132	117	87	125
France	51	65	67	77	93	96	83	68	73	75
Germany	102	123	118	124	164	196	208	170	175	202
Europe, other	445	482	612	570	669	709	799	878	893	1,042
East Asia, total	2,563	3,604	4,486	4,865	5,010	5,484	5,487	5,594	4,421	4,455
Taiwan	857	1,012	1,127	1,242	1,213	1,301	1,240	1,149	995	871
China, People's Republic of	620	1,150	1,793	2,045	2,227	2,531	2,752	2,952	2,225	2,378
Hong Kong	93	94	121	109	109	95	90	109	81	81
Japan	106	147	125	132	132	182	155	167	148	149
Korea	753	979	1,114	1,127	1,123	1,150	1,005	979	818	780
Thailand	76	111	93	87	77	97	113	119	80	114
East Asia, other	58	111	113	123	129	128	132	119	74	82
West Asia, total	1,308	1,654	1,670	1,891	1,903	2,077	2,181	2,139	1,818	1,703
India	536	711	752	861	933	1,065	1,207	1,258	1,164	1,060
Iran	198	258	227	200	203	174	173	147	105	89
Iraq	24	27	24	34	17	22	14	9	7	5
Israel	69	79	89	87	89	109	86	84	56	55
Lebanon	51	45	55	62	50	73	56	53	29	33
Saudi Arabia	61	63	67	76	46	76	71	74	58	38
Turkey	78	106	100	132	136	144	166	146	140	157
West Asia, other	291	365	356	439	429	414	408	368	259	266
Pacific/Australasia, total	166	175	216	220	227	231	231	232	190	181
Australia	41	46	35	40	47	56	61	42	47	45
Indonesia	52	53	69	78	78	83	83	69	59	55
Pacific/Australasia, other	73	76	112	102	102	92	87	121	84	81
Africa, total	446	539	500	510	474	583	423	441	322	329
Egypt	109	160	112	101	88	104	78	89	69	77
Nigeria	59	83	83	68	55	60	53	39	21	34
Africa, other	278	296	305	341	331	419	292	313	232	218
Country unknown	623	206	170	130	136	62	63	160	417	98

See explanatory information, if any, and SOURCE at end of table.

Table 5. Non-U.S. citizens awarded science and engineering (S&E) doctorates, by country of citizenship, visa type, and year of doctorate: 1989-98

Country of citizenship	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Total non-U S. citizens, engineering									
Total foreign citizenship	2,305	2,666	3,021	3,154	3,253	3,491	3,480	3,508	2,984	2,870
North America, total	76	84	84	73	82	90	82	96	81	92
Canada	38	41	54	46	42	36	41	45	44	35
Caribbean	5	7	3	5	4	14	7	8	12	15
Central America	5	11	5	6	9	10	8	6	2	6
Mexico	28	25	22	16	27	30	26	37	23	36
South America, total	73	84	86	87	97	111	88	117	88	96
Argentina	6	12	12	14	10	7	7	8	14	13
Brazil	30	31	34	31	46	49	46	65	40	46
Chile	9	11	8	10	5	8	8	8	1	1
Colombia	5	8	11	9	8	12	10	7	4	7
South America, other	23	22	21	23	28	35	17	29	29	29
Europe, total	198	205	200	202	244	257	297	235	232	292
Belgium	5	12	9	10	7	7	12	4	4	3
England, United Kingdom	14	14	14	17	18	14	20	10	11	12
France	18	27	19	25	32	32	24	25	11	23
Germany	17	15	8	18	23	29	37	16	27	28
Europe, other	144	137	150	132	164	175	204	180	179	226
East Asia, total	988	1,266	1,629	1,701	1,733	1,887	1,869	1,849	1,427	1,431
Taiwan	427	476	597	637	592	670	616	572	417	375
China, People's Republic of	159	328	477	508	543	656	773	801	619	655
Hong Kong	38	30	30	37	32	14	20	31	12	26
Japan	19	17	29	25	23	46	30	32	37	19
Korea	308	360	435	437	484	429	344	323	291	281
Thailand	16	21	20	21	18	34	38	43	35	50
East Asia, other	21	34	41	36	41	38	48	47	16	25
West Asia, total	577	740	768	863	889	908	961	981	879	792
India	251	314	357	405	448	480	572	618	576	510
Iran	110	139	123	110	95	92	85	66	58	43
Iraq	9	14	11	14	6	9	8	2	5	3
Israel	19	22	27	26	23	17	19	20	12	11
Lebanon	25	35	38	37	27	45	31	21	9	17
Saudi Arabia	26	22	26	31	19	28	25	34	28	17
Turkey	52	59	64	81	74	64	73	72	85	79
West Asia, other	85	135	122	159	197	173	148	148	106	112
Pacific/Australasia, total	26	25	45	48	43	50	44	38	44	45
Australia	2	3	7	11	6	11	7	6	8	4
Indonesia	12	14	19	24	29	28	29	15	20	27
Pacific/Australasia, other	12	8	19	13	8	11	8	17	16	14
Africa, total	140	187	155	138	121	168	122	143	103	102
Egypt	49	82	57	46	48	63	48	59	44	56
Nigeria	11	23	20	11	12	6	14	11	7	7
Africa, other	80	82	78	81	61	99	60	73	52	39
Country unknown	227	75	54	42	44	20	17	49	130	20

See explanatory information, if any, and SOURCE at end of table.

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Table 5. Non-U.S. citizens awarded science and engineering (S&E) doctorates, by country of citizenship, visa type, and year of doctorate: 1989-98

Country of citizenship	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Total non-U.S. citizens, sciences									
Total foreign citizenship	4,210	5,102	5,905	6,321	6,501	7,051	7,023	7,301	6,256	6,289
North America, total	327	362	441	442	424	457	423	434	374	435
Canada	182	212	243	258	243	239	233	231	199	233
Caribbean	24	29	51	39	34	47	53	43	33	45
Central America	29	42	41	46	35	59	35	39	32	32
Mexico	92	79	106	99	112	112	102	121	110	125
South America, total	224	259	301	307	297	297	271	338	284	309
Argentina	37	53	50	72	43	49	42	58	53	58
Brazil	70	69	85	102	105	108	91	140	96	104
Chile	38	39	46	38	47	34	30	28	26	22
Colombia	22	32	38	28	27	36	35	35	34	18
South America, other	57	66	82	67	75	70	73	77	75	107
Europe, total	511	596	772	748	860	893	957	1,023	1,013	1,169
Belgium	10	19	34	32	17	14	20	21	13	14
England, United Kingdom	82	86	118	120	136	114	112	107	76	113
France	33	38	48	52	61	64	59	43	62	52
Germany	85	108	110	106	141	167	171	154	148	174
Europe, other	301	345	462	438	505	534	595	698	714	816
East Asia, total	1,575	2,338	2,857	3,164	3,277	3,597	3,618	3,745	2,994	3,024
Taiwan	430	536	530	605	621	631	624	577	578	496
China, People's Republic of	461	822	1,316	1,537	1,684	1,875	1,979	2,151	1,606	1,723
Hong Kong	55	64	91	72	77	81	70	78	69	55
Japan	87	130	96	107	109	136	125	135	111	130
Korea	445	619	679	690	639	721	661	656	527	499
Thailand	60	90	73	66	59	63	75	76	45	64
East Asia, other	37	77	72	87	88	90	84	72	58	57
West Asia, total	731	914	902	1,028	1,014	1,169	1,220	1,158	939	911
India	285	397	395	456	485	585	635	640	588	550
Iran	88	119	104	90	108	82	88	81	47	46
Iraq	15	13	13	20	11	13	6	7	2	2
Israel	50	57	62	61	66	92	67	64	44	44
Lebanon	26	10	17	25	23	28	25	32	20	16
Saudi Arabia	35	41	41	45	27	48	46	40	30	21
Turkey	26	47	36	51	62	80	93	74	55	78
West Asia, other	206	230	234	280	232	241	260	220	153	154
Pacific/Australasia, total	140	150	171	172	184	181	187	194	146	136
Australia	39	43	28	29	41	45	54	36	39	41
Indonesia	40	39	50	54	49	55	54	54	39	28
Pacific/Australasia, other	61	68	93	89	94	81	79	104	68	67
Africa, total	306	352	345	372	353	415	301	298	219	227
Egypt	60	78	55	55	40	41	30	30	25	21
Nigeria	48	60	63	57	43	54	39	28	14	27
Africa, other	198	214	227	260	270	320	232	240	180	179
Country unknown	396	131	116	88	92	42	46	111	287	78

See explanatory information, if any, and SOURCE at end of table.

Table 5. Non-U.S. citizens awarded science and engineering (S&E) doctorates, by country of citizenship, visa type, and year of doctorate: 1989-98

Country of citizenship	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Permanent visas, S&E									
Total foreign citizenship	1,124	1,197	1,285	1,383	1,641	3,021	3,509	3,007	2,277	2,016
North America, total	88	99	126	118	120	119	135	119	104	110
Canada	55	55	75	76	71	58	78	70	53	65
Caribbean	8	16	19	16	15	28	26	27	20	21
Central America	9	11	11	8	6	14	8	2	8	5
Mexico	16	17	21	18	28	19	23	20	23	19
South America, total	41	67	62	74	63	64	51	64	69	52
Argentina	4	11	16	17	17	13	9	17	20	8
Brazil	9	13	8	21	11	16	11	11	7	11
Chile	6	7	6	6	7	4	9	5	7	7
Colombia	7	11	11	9	5	13	3	10	6	5
South America, other	15	25	21	21	23	18	14	21	29	21
Europe, total	159	179	211	210	258	275	284	312	336	359
Belgium	3	6	8	8	8	4	7	8	8	3
England, United Kingdom	36	38	52	58	47	56	49	50	39	44
France	14	15	12	10	19	16	15	16	23	25
Germany	24	38	25	39	45	62	53	51	42	42
Europe, other	82	82	114	95	139	137	160	187	224	245
East Asia, total	264	323	407	486	663	2,001	2,487	1,935	1,233	1,076
Taiwan	142	147	160	172	155	178	165	136	147	102
China, People's Republic of	36	54	100	162	352	1,642	2,169	1,628	952	847
Hong Kong	15	12	16	28	20	20	15	18	15	14
Japan	13	23	20	18	20	30	19	23	23	21
Korea	52	70	91	83	91	99	87	93	80	71
Thailand	4	2	8	9	11	11	10	14	4	8
East Asia, other	2	15	12	14	14	21	22	23	12	13
West Asia, total	279	346	287	340	359	375	383	389	314	259
India	94	119	108	148	142	173	168	199	187	135
Iran	93	125	83	82	100	65	84	74	36	38
Iraq	2	3	3	8	4	7	5	4	1	3
Israel	20	11	18	15	22	41	21	17	17	17
Lebanon	14	18	10	6	11	12	11	11	6	7
Saudi Arabia	6	6	2	7	4	7	4	10	1	0
Turkey	11	17	11	20	18	15	19	23	21	17
West Asia, other	39	47	52	54	58	55	71	51	45	42
Pacific/Australasia, total	19	25	34	23	35	40	43	32	30	25
Australia	8	12	9	9	10	13	10	13	9	6
Indonesia	5	3	9	5	6	13	16	3	8	7
Pacific/Australasia, other	6	10	16	9	19	14	17	16	13	12
Africa, total	80	92	103	95	100	123	91	82	83	82
Egypt	13	14	13	9	9	12	12	11	12	12
Nigeria	20	30	35	34	30	33	32	17	7	15
Africa, other	47	48	55	52	61	78	47	54	64	55
Country unknown	194	66	55	37	43	24	35	74	108	53

See explanatory information, if any, and SOURCE at end of table.

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Table 5. Non-U.S. citizens awarded science and engineering (S&E) doctorates, by country of citizenship, visa type, and year of doctorate: 1989-98

Country of citizenship	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Permanent visas, engineering									
Total foreign citizenship	365	389	388	411	469	838	956	792	593	478
North America, total	12	20	17	13	16	14	23	15	14	17
Canada	9	9	14	8	9	6	9	6	7	8
Caribbean	0	4	0	2	2	4	3	5	4	5
Central America	0	3	2	2	1	2	4	0	1	0
Mexico	3	4	1	1	4	2	7	4	2	4
South America, total	7	12	12	14	8	13	7	9	12	7
Argentina	0	2	5	4	2	1	1	3	5	0
Brazil	1	2	2	2	1	2	2	3	2	2
Chile	1	0	0	1	0	1	1	0	0	0
Colombia	2	1	1	2	1	4	1	1	2	1
South America, other	3	7	4	5	4	5	2	2	3	4
Europe, total	30	31	33	33	42	49	68	58	70	68
Belgium	0	1	1	2	2	1	1	1	3	0
England, United Kingdom	5	5	3	8	4	7	9	4	4	6
France	2	6	4	3	4	5	3	5	3	6
Germany	3	4	0	5	3	11	8	6	6	3
Europe, other	20	15	25	15	29	25	47	42	54	53
East Asia, total	105	128	166	163	221	576	696	515	317	253
Taiwan	67	69	88	80	73	89	76	77	57	39
China, People's Republic of	9	19	25	39	88	426	566	378	215	182
Hong Kong	5	5	7	10	10	7	5	9	4	4
Japan	1	1	5	3	2	5	2	2	3	0
Korea	22	30	36	25	43	42	34	36	36	20
Thailand	0	0	1	2	1	1	4	3	0	5
East Asia, other	1	4	4	4	4	6	9	10	2	3
West Asia, total	122	150	118	144	151	140	119	152	121	96
India	35	42	44	57	56	61	55	78	65	43
Iran	55	61	42	44	43	28	29	29	17	19
Iraq	1	1	0	2	2	5	3	0	1	2
Israel	2	3	4	5	6	6	0	0	2	2
Lebanon	7	13	4	4	6	5	3	8	2	5
Saudi Arabia	1	2	0	1	2	3	3	3	0	0
Turkey	5	10	5	10	6	6	7	12	15	4
West Asia, other	16	18	19	21	30	26	19	22	19	21
Pacific/Australasia, total	3	5	5	7	6	12	9	4	7	7
Australia	0	0	2	4	1	4	0	2	1	0
Indonesia	2	3	3	2	4	7	7	0	4	6
Pacific/Australasia, other	1	2	0	1	1	1	2	2	2	1
Africa, total	17	21	25	23	14	28	28	24	22	20
Egypt	4	7	4	3	3	4	9	4	5	8
Nigeria	3	5	9	6	3	2	10	5	1	2
Africa, other	10	9	12	14	8	22	9	15	16	10
Country unknown	69	22	12	14	11	6	6	15	30	10

See explanatory information, if any, and SOURCE at end of table.

Table 5. Non-U.S. citizens awarded science and engineering (S&E) doctorates, by country of citizenship, visa type, and year of doctorate: 1989-98

Country of citizenship	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Permanent visas, sciences									
Total foreign citizenship	759	808	897	972	1,172	2,183	2,553	2,215	1,684	1,538
North America, total	76	79	109	105	104	105	112	104	90	93
Canada	46	46	61	68	62	52	69	64	46	57
Caribbean	8	12	19	14	13	24	23	22	16	16
Central America	9	8	9	6	5	12	4	2	7	5
Mexico	13	13	20	17	24	17	16	16	21	15
South America, total	34	55	50	60	55	51	44	55	57	45
Argentina	4	9	11	13	15	12	8	14	15	8
Brazil	8	11	6	19	10	14	9	8	5	9
Chile	5	7	6	5	7	3	8	5	7	7
Colombia	5	10	10	7	4	9	7	9	4	4
South America, other	12	18	17	16	19	13	12	19	26	17
Europe, total	129	148	178	177	216	226	216	254	266	291
Belgium	3	5	7	5	6	3	6	7	5	3
England, United Kingdom	31	33	49	50	43	49	40	46	35	38
France	12	9	8	7	15	11	12	11	20	19
Germany	21	34	25	34	42	51	45	45	36	39
Europe, other	62	67	89	80	110	112	113	145	170	192
East Asia, total	159	195	241	323	442	1,425	1,791	1,420	916	823
Taiwan	75	78	72	92	82	89	89	59	90	63
China, People's Republic of	27	35	75	123	264	1,216	1,603	1,250	737	665
Hong Kong	10	7	9	18	10	13	10	9	11	10
Japan	12	22	15	15	18	25	17	21	20	21
Korea	30	40	55	58	48	57	53	57	44	51
Thailand	4	2	7	7	10	10	6	11	4	3
East Asia, other	1	11	8	10	10	15	13	13	10	10
West Asia, total	157	196	169	196	208	235	264	237	193	163
India	59	77	64	91	86	112	113	121	122	92
Iran	38	64	41	38	57	37	55	45	19	19
Iraq	1	2	3	6	2	2	2	4	0	1
Israel	18	8	14	10	16	35	21	17	15	15
Lebanon	7	5	6	2	5	7	8	3	4	2
Saudi Arabia	5	4	2	6	2	4	1	7	1	0
Turkey	6	7	6	10	12	9	12	11	6	13
West Asia, other	23	29	33	33	28	29	52	29	26	21
Pacific/Australasia, total	16	20	29	16	29	28	34	28	23	18
Australia	8	12	7	5	9	9	10	11	8	6
Indonesia	3	0	6	3	2	6	9	3	4	1
Pacific/Australasia, other	5	8	16	8	18	13	15	14	11	11
Africa, total	63	71	78	72	86	95	63	58	61	62
Egypt	9	7	9	6	6	8	3	7	7	4
Nigeria	17	25	26	28	27	31	22	12	6	13
Africa, other	37	39	43	38	53	56	38	39	48	45
Country unknown	125	44	43	23	32	18	29	59	78	43

See explanatory information, if any, and SOURCE at end of table.

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Table 5. Non-U.S. citizens awarded science and engineering (S&E) doctorates, by country of citizenship, visa type, and year of doctorate: 1989-98

Country of citizenship	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Temporary visas, S&E									
Total foreign citizenship	5,391	6,571	7,641	8,092	8,113	7,521	6,994	7,802	6,963	7,143
North America, total	315	347	399	397	386	428	370	411	351	417
Canada	165	198	222	228	214	217	196	206	190	203
Caribbean	21	20	35	28	23	33	34	24	25	39
Central America	25	42	35	44	38	55	35	43	26	33
Mexico	104	87	107	97	111	123	105	138	110	142
South America, total	256	276	325	320	331	344	308	391	303	353
Argentina	39	54	46	69	36	43	40	49	47	63
Brazil	91	87	111	112	140	141	126	194	129	139
Chile	41	43	48	42	45	38	29	31	20	16
Colombia	20	29	38	28	30	35	37	32	32	20
South America, other	65	63	82	69	80	87	76	85	75	115
Europe, total	550	622	761	740	846	875	970	946	909	1,102
Belgium	12	25	35	34	16	17	25	17	9	14
England, United Kingdom	60	62	80	79	107	72	83	67	48	81
France	37	50	55	67	74	80	68	52	50	50
Germany	78	85	93	85	119	134	155	119	133	160
Europe, other	363	400	498	475	530	572	639	691	669	797
East Asia, total	2,299	3,281	4,079	4,379	4,347	3,483	3,000	3,659	3,188	3,379
Taiwan	715	865	967	1,070	1,058	1,123	1,075	1,013	848	769
China, People's Republic of	584	1,096	1,693	1,883	1,875	889	583	1,324	1,273	1,531
Hong Kong	78	82	105	81	89	75	75	91	66	67
Japan	93	124	105	114	112	152	136	144	125	128
Korea	701	909	1,023	1,044	1,032	1,051	918	886	738	709
Thailand	72	109	85	78	66	86	103	105	76	106
East Asia, other	56	96	101	109	115	107	110	96	62	69
West Asia, total	1,029	1,308	1,383	1,551	1,544	1,702	1,798	1,750	1,504	1,444
India	442	592	644	713	791	892	1,039	1,059	977	925
Iran	105	133	144	118	103	109	89	73	69	51
Iraq	22	24	21	26	13	15	9	5	6	2
Israel	49	68	71	72	67	68	65	67	39	38
Lebanon	37	27	45	56	39	61	45	42	23	26
Saudi Arabia	55	57	65	69	42	69	67	64	57	38
Turkey	67	89	89	112	118	129	147	123	119	140
West Asia, other	252	318	304	385	371	359	337	317	214	224
Pacific/Australasia, total	147	150	182	197	192	191	188	200	160	156
Australia	33	34	26	31	37	43	51	29	38	39
Indonesia	47	50	60	73	72	70	67	66	51	48
Pacific/Australasia, other	67	66	96	93	83	78	70	105	71	69
Africa, total	366	447	397	415	374	460	332	359	239	247
Egypt	96	146	99	92	79	92	66	78	57	65
Nigeria	39	53	48	34	25	27	21	22	14	19
Africa, other	231	248	250	289	270	341	245	259	168	163
Country unknown	429	140	115	93	93	38	28	86	309	45

See explanatory information, if any, and SOURCE at end of table.

Table 5. Non-U.S. citizens awarded science and engineering (S&E) doctorates, by country of citizenship, visa type, and year of doctorate: 1989-98

Country of citizenship	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Temporary visas, engineering									
Total foreign citizenship	1,940	2,277	2,633	2,743	2,784	2,653	2,524	2,716	2,391	2,392
North America, total	64	64	67	60	66	76	59	81	67	75
Canada	29	32	40	38	33	30	32	39	37	27
Caribbean	5	3	3	3	2	10	4	3	8	10
Central America	5	8	3	4	8	8	4	6	1	6
Mexico	25	21	21	15	23	28	19	33	21	32
South America, total	66	72	74	73	89	98	81	108	76	89
Argentina	6	10	7	10	8	6	6	5	9	13
Brazil	29	29	32	29	45	47	44	62	38	44
Chile	8	11	8	9	5	7	7	8	1	1
Colombia	3	7	10	7	7	8	9	6	2	6
South America, other	20	15	17	18	24	30	15	27	26	25
Europe, total	168	174	167	169	202	208	229	177	162	224
Belgium	5	11	8	8	5	6	11	3	1	3
England, United Kingdom	9	9	11	9	14	7	11	6	7	6
France	16	21	15	22	28	27	21	20	8	17
Germany	14	11	8	13	20	18	29	10	21	25
Europe, other	124	122	125	117	135	150	157	138	125	173
East Asia, total	883	1,138	1,463	1,538	1,512	1,311	1,173	1,334	1,110	1,178
Taiwan	360	407	509	557	519	581	540	495	360	336
China, People's Republic of	150	309	452	469	455	230	207	423	404	473
Hong Kong	33	25	23	27	22	7	15	22	8	22
Japan	18	16	24	22	21	41	28	30	34	19
Korea	286	330	399	412	441	387	310	287	255	261
Thailand	16	21	19	19	17	33	34	40	35	45
East Asia, other	20	30	37	32	37	32	39	37	14	22
West Asia, total	455	590	650	719	738	768	842	829	758	696
India	216	272	313	348	392	419	517	540	511	467
Iran	55	78	81	66	52	64	56	37	41	24
Iraq	8	13	11	12	4	4	5	2	4	1
Israel	17	19	23	21	17	11	19	20	10	9
Lebanon	18	22	34	33	21	40	28	13	7	12
Saudi Arabia	25	20	26	30	17	25	22	31	28	17
Turkey	47	49	59	71	68	58	66	60	70	75
West Asia, other	69	117	103	138	167	147	129	126	87	91
Pacific/Australasia, total	23	20	40	41	37	38	35	34	37	38
Australia	2	3	5	7	5	7	7	4	7	4
Indonesia	10	11	16	22	25	21	22	15	16	21
Pacific/Australasia, other	11	6	19	12	7	10	6	15	14	13
Africa, total	123	166	130	115	107	140	94	119	81	82
Egypt	45	75	53	43	45	59	39	55	39	48
Nigeria	8	18	11	5	9	4	4	6	6	5
Africa, other	70	73	66	67	53	77	51	58	36	29
Country unknown	158	53	42	28	33	14	11	34	100	10

See explanatory information, if any, and SOURCE at end of table.

Table 5. Non-U.S. citizens awarded science and engineering (S&E) doctorates, by country of citizenship, visa type, and year of doctorate: 1989-98

Country of citizenship	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Temporary visas, sciences									
Total foreign citizenship	3,451	4,294	5,008	5,349	5,329	4,868	4,470	5,086	4,572	4,751
North America, total	251	283	332	337	320	352	311	330	284	342
Canada	136	166	182	190	181	187	164	167	153	176
Caribbean	16	17	32	25	21	23	30	21	17	29
Central America	20	34	32	40	30	47	31	37	25	27
Mexico	79	66	86	82	88	95	86	105	89	110
South America, total	190	204	251	247	242	246	227	283	227	264
Argentina	33	44	39	59	28	37	34	44	38	50
Brazil	62	58	79	83	95	94	82	132	91	95
Chile	33	32	40	33	40	31	22	23	19	15
Colombia	17	22	28	21	23	27	28	26	30	14
South America, other	45	48	65	51	56	57	61	58	49	90
Europe, total	382	448	594	571	644	667	741	769	747	878
Belgium	7	14	27	26	11	11	14	14	8	11
England, United Kingdom	51	53	69	70	93	65	72	61	41	75
France	21	29	40	45	46	53	47	32	42	33
Germany	64	74	85	72	99	116	126	109	112	135
Europe, other	239	278	373	358	395	422	482	553	544	624
East Asia, total	1,416	2,143	2,616	2,841	2,835	2,172	1,827	2,325	2,078	2,201
Taiwan	355	458	458	513	539	542	535	518	488	433
China, People's Republic of	434	787	1,241	1,414	1,420	659	376	901	869	1,058
Hong Kong	45	57	82	54	67	68	60	69	58	45
Japan	75	108	81	92	91	111	108	114	91	109
Korea	415	579	624	632	591	664	608	599	483	448
Thailand	56	88	66	59	49	53	69	65	41	61
East Asia, other	36	66	64	77	78	75	71	59	48	47
West Asia, total	574	718	733	832	806	934	956	921	746	748
India	226	320	331	365	399	473	522	519	466	458
Iran	50	55	63	52	51	45	33	36	28	27
Iraq	14	11	10	14	9	11	4	3	2	1
Israel	32	49	48	51	50	57	46	47	29	29
Lebanon	19	5	11	23	18	21	17	29	16	14
Saudi Arabia	30	37	39	39	25	44	45	33	29	21
Turkey	20	40	30	41	50	71	81	63	49	65
West Asia, other	183	201	201	247	204	212	208	191	127	133
Pacific/Australasia, total	124	130	142	156	155	153	153	166	123	118
Australia	31	31	21	24	32	36	44	25	31	35
Indonesia	37	39	44	51	47	49	45	51	35	27
Pacific/Australasia, other	56	60	77	81	76	68	64	90	57	56
Africa, total	243	281	267	300	267	320	238	240	158	165
Egypt	51	71	46	49	34	33	27	23	18	17
Nigeria	31	35	37	29	16	23	17	16	8	14
Africa, other	161	175	184	222	217	264	194	201	132	134
Country unknown	271	87	73	65	60	24	17	52	209	35

SOURCE: National Science Foundation/Science Resources Studies, Survey of Earned Doctorates

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	S&E rank*	Total S&E	Engineering						Physical sciences			
			Total	Chemical	Civil	Electrical	Mechanical	Other engineering	Total	Physics & astronomy	Chemistry	Other physical sciences
Total, all institutions		27,272	5,919	774	650	1,593	1,022	1,880	3,825	1,584	2,217	24
Alabama, total	24	345	86	11	4	15	23	33	48	29	19	0
Alabama A&M University	261	10	1	0	0	0	0	1	6	6	0	0
Auburn University	67	138	36	10	3	5	6	12	20	7	13	0
United States Sports Academy	334	0	0	0	0	0	0	0	0	0	0	0
University of Alabama	128	57	17	1	1	4	6	5	8	5	3	0
University of Alabama Birmingham	95	88	9	0	0	0	0	9	6	4	2	0
University of Alabama Huntsville	157	41	23	0	0	6	11	6	8	7	1	0
University of South Alabama	256	11	0	0	0	0	0	0	0	0	0	0
Alaska, total	48	32	4	0	2	0	1	1	5	5	0	0
University of Alaska Fairbanks	174	32	4	0	2	0	1	1	5	5	0	0
Arizona, total	18	486	100	5	12	33	16	34	73	46	26	1
Arizona State University Main	45	182	59	3	8	22	7	19	17	10	7	0
Northern Arizona University	252	12	0	0	0	0	0	0	0	0	0	0
University of Arizona	20	292	41	2	4	11	9	15	56	36	19	1
Arkansas, total	41	77	11	2	0	4	1	4	13	5	6	2
Arkansas State U Main Campus	334	0	0	0	0	0	0	0	0	0	0	0
U of Arkansas	125	60	11	2	0	4	1	4	10	4	6	0
U of Arkansas Little Rock	300	3	0	0	0	0	0	0	3	1	0	2
U of Arkansas for Med Sciences	240	14	0	0	0	0	0	0	0	0	0	0
California, total	1	3,397	736	59	67	256	141	213	499	212	283	4
Azusa Pacific University	334	0	0	0	0	0	0	0	0	0	0	0
Biola University	240	14	0	0	0	0	0	0	0	0	0	0
CA Inst Technology	42	190	45	6	4	11	8	16	80	48	30	2
CA Sch Prof Psych Berkeley	121	62	0	0	0	0	0	0	0	0	0	0
CA Sch Prof Psych Fresno	165	37	0	0	0	0	0	0	0	0	0	0
CA Sch Prof Psych Los Angeles	106	75	0	0	0	0	0	0	0	0	0	0
CA Sch Prof Psych San Diego	102	77	1	0	0	0	0	1	0	0	0	0
Claremont Graduate University	144	47	2	0	0	0	0	2	0	0	0	0
Fielding Institute, The	196	25	0	0	0	0	0	0	0	0	0	0
Fuller Theological Seminary CA	207	23	0	0	0	0	0	0	0	0	0	0
Graduate Theological Union	334	0	0	0	0	0	0	0	0	0	0	0
Loma Linda University	270	8	0	0	0	0	0	0	0	0	0	0
Loma Linda U La Sierra Campus	300	3	0	0	0	0	0	0	0	0	0	0
Naval Postgraduate School	261	10	6	0	0	3	0	3	1	1	0	0
Pacific Grad School of Psych	191	27	0	0	0	0	0	0	0	0	0	0
Pepperdine University Malibu	320	1	0	0	0	0	0	0	0	0	0	0
Rand Grad Sch of Policy Studies	289	4	0	0	0	0	0	0	0	0	0	0
San Diego State University	223	20	1	0	0	0	1	0	0	0	0	0
Santa Clara University	308	2	2	0	0	1	1	0	0	0	0	0
School of Theology at Claremont	320	1	0	0	0	0	0	0	0	0	0	0
Scripps Research Institute, The	213	22	0	0	0	0	0	0	0	0	0	0
Stanford University	5	468	177	10	9	62	36	60	62	22	40	0
United States International U	203	24	0	0	0	0	0	0	0	0	0	0
U of California Berkeley	2	534	153	18	22	37	43	33	91	37	54	0
U of California Davis	21	288	42	6	4	13	4	15	35	11	24	0
U of California Irvine	60	157	36	1	4	9	13	9	39	11	28	0
U of California Los Angeles	15	357	75	4	13	28	21	9	53	23	30	0
U of California Riverside	99	83	0	0	0	0	0	0	11	4	7	0
U of California San Diego	31	238	50	2	1	18	7	22	37	12	24	1
U of California San Francisco	111	68	3	0	0	0	0	3	9	1	8	0
U of California Santa Barbara	43	189	61	11	0	31	5	14	31	20	11	0
U of California Santa Cruz	108	73	7	0	0	6	0	1	22	15	7	0

See explanatory information, if any, and SOURCE at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	Earth, atmos., & ocean sci-ences	Mathe-matics	Com-puter sci-ences	Biological & agricultural sciences			Psy-chology	Social sci-ences	Non-S&E, total	Grand total, all fields
				Total	Bio-logical	Agri-cul-tural				
Total, all institutions	814	1,177	923	6,883	5,848	1,035	3,681	4,050	15,411	42,683
Alabama, total	6	14	11	106	79	27	48	26	229	574
Alabama A&M University	0	0	0	3	1	2	0	0	0	10
Auburn University	1	9	2	35	10	25	22	13	54	192
United States Sports Academy	0	0	0	0	0	0	0	0	19	19
University of Alabama	0	2	1	8	8	0	10	11	93	150
University of Alabama Birmingham	0	1	4	50	50	0	16	2	53	141
University of Alabama Huntsville	4	2	4	0	0	0	0	0	0	41
University of South Alabama	1	0	0	10	10	0	0	0	10	21
Alaska, total	7	0	0	16	13	3	0	0	2	34
University of Alaska Fairbanks	7	0	0	16	13	3	0	0	2	34
Arizona, total	36	21	9	107	76	31	57	83	273	759
Arizona State University Main	7	9	7	20	20	0	32	31	110	292
Northern Arizona University	0	0	0	5	3	2	0	7	44	56
University of Arizona	29	12	2	82	53	29	25	45	119	411
Arkansas, total	0	1	0	45	25	20	7	0	92	169
Arkansas State U Main Campus	0	0	0	0	0	0	0	0	2	2
U of Arkansas	0	1	0	31	11	20	7	0	62	122
U of Arkansas Little Rock	0	0	0	0	0	0	0	0	28	31
U of Arkansas for Med Sciences	0	0	0	14	14	0	0	0	0	14
California, total	115	129	121	710	665	45	565	522	1,334	4,731
Azusa Pacific University	0	0	0	0	0	0	0	0	4	4
Biola University	0	0	0	0	0	0	14	0	2	16
CA Inst Technology	15	11	10	24	24	0	1	4	1	191
CA Sch Prof Psych Berkeley	0	0	0	0	0	0	62	0	1	63
CA Sch Prof Psych Fresno	0	0	0	0	0	0	37	0	0	37
CA Sch Prof Psych Los Angeles	0	0	0	0	0	0	75	0	2	77
CA Sch Prof Psych San Diego	0	0	0	0	0	0	76	0	2	79
Claremont Graduate University	0	2	1	0	0	0	14	28	48	95
Fielding Institute, The	0	0	0	0	0	0	24	1	13	38
Fuller Theological Seminary CA	0	0	1	0	0	0	22	0	8	31
Graduate Theological Union	0	0	0	0	0	0	0	0	22	22
Loma Linda University	0	0	0	8	8	0	0	0	4	12
Loma Linda U La Sierra Campus	0	0	0	0	0	0	0	3	1	4
Naval Postgraduate School	1	1	1	0	0	0	0	0	0	10
Pacific Grad School of Psych	0	0	0	0	0	0	27	0	0	27
Pepperdine University Malibu	0	0	0	0	0	0	0	1	32	33
Rand Grad Sch of Policy Studies	0	0	0	0	0	0	0	4	0	4
San Diego State University	0	0	0	7	7	0	11	1	12	32
Santa Clara University	0	0	0	0	0	0	0	0	0	2
School of Theology at Claremont	0	0	0	0	0	0	1	0	1	2
Scripps Research Institute, The	0	0	0	13	13	0	0	0	0	22
Stanford University	28	21	27	75	75	0	13	65	127	595
United States International U	0	0	0	0	0	0	23	1	15	39
U of California Berkeley	10	33	22	105	92	13	18	102	214	748
U of California Davis	5	5	4	156	129	27	8	33	49	337
U of California Irvine	1	1	11	39	39	0	7	23	39	196
U of California Los Angeles	18	21	14	66	66	0	19	91	248	605
U of California Riverside	3	9	1	30	27	3	7	22	39	122
U of California San Diego	14	10	9	64	62	2	23	31	30	268
U of California San Francisco	0	0	0	48	48	0	2	6	23	91
U of California Santa Barbara	6	11	7	19	19	0	18	36	74	263
U of California Santa Cruz	6	2	1	20	20	0	2	13	14	87

See explanatory information, if any, and SOURCE at end of table.

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Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	S&E rank*	Total S&E	Engineering						Physical sciences			
			Total	Chemical	Civil	Electrical	Mechanical	Other engineering	Total	Physics & astronomy	Chemistry	Other physical sciences
California, continued:												
University of La Verne	320	1	0	0	0	0	0	0	0	0	0	0
University of the Pacific	320	1	0	0	0	0	0	0	0	0	0	0
University of San Diego	320	1	0	0	0	0	0	0	0	0	0	0
University of San Francisco	289	4	0	0	0	0	0	0	0	0	0	0
University of Southern CA	36	218	75	1	10	37	2	25	19	7	11	1
Wright Institute, All Campuses	149	45	0	0	0	0	0	0	0	0	0	0
Colorado, total	17	533	126	15	31	40	8	32	77	31	44	2
Colorado School of Mines	165	37	17	5	0	1	0	11	3	0	3	0
Colorado State University	48	180	35	2	13	14	3	3	25	4	20	1
University of Colorado Boulder	25	274	73	8	18	25	5	17	45	26	18	1
University of Denver	176	31	1	0	0	0	0	1	3	1	2	0
University of Northern Colorado	256	11	0	0	0	0	0	0	1	0	1	0
Connecticut, total	22	434	53	14	4	13	12	10	65	28	37	0
University of Connecticut	47	181	34	6	4	8	7	9	22	8	14	0
University of New Haven	334	0	0	0	0	0	0	0	0	0	0	0
Wesleyan University	232	17	0	0	0	0	0	0	8	3	5	0
Yale University	32	236	19	8	0	5	5	1	35	17	18	0
Delaware, total	38	111	31	10	4	7	6	4	18	5	13	0
University of Delaware	82	111	31	10	4	7	6	4	18	5	13	0
Wilmington College	334	0	0	0	0	0	0	0	0	0	0	0
District of Columbia, total	27	298	39	0	5	6	14	14	36	15	21	0
American University	144	47	0	0	0	0	0	0	7	4	3	0
Catholic University of America	154	42	9	0	1	1	7	0	11	5	6	0
Gallaudet University	308	2	0	0	0	0	0	0	0	0	0	0
George Washington University	84	107	27	0	4	3	6	14	8	5	3	0
Georgetown University	136	51	0	0	0	0	0	0	3	0	3	0
Howard University	139	49	3	0	0	2	1	0	7	1	6	0
Florida, total	9	997	185	16	16	62	30	61	125	40	84	1
Barry University	334	0	0	0	0	0	0	0	0	0	0	0
Caribbean Ctr Adv Studies Miami	176	31	0	0	0	0	0	0	0	0	0	0
FL Agricultural and Mechanical U	308	2	1	0	0	0	1	0	0	0	0	0
Florida Atlantic University	207	23	14	0	0	9	1	4	2	2	0	0
Florida Institute of Technology	229	18	8	0	0	5	0	3	2	1	1	0
Florida International University	187	28	4	0	0	2	2	0	0	0	0	0
Florida State University	72	131	9	1	0	0	7	1	35	16	19	0
Nova Southeastern University	41	191	0	0	0	0	0	0	0	0	0	0
University of Central Florida	159	40	22	0	3	10	3	6	7	7	0	0
University of Florida	14	370	97	13	8	24	14	38	71	11	59	1
University of Miami	91	94	14	0	2	5	2	5	4	3	1	0
University of Sarasota	289	4	0	0	0	0	0	0	0	0	0	0
University of South Florida	116	65	16	2	3	7	0	4	4	0	4	0
Georgia, total	15	616	178	16	22	58	26	56	63	17	45	1
Clark Atlanta University	256	11	0	0	0	0	0	0	0	0	0	0
Emory University	102	77	1	0	0	0	1	0	19	3	16	0
Georgia Inst of Tech	27	255	175	15	22	58	25	55	25	10	15	0
Georgia Southern University	334	0	0	0	0	0	0	0	0	0	0	0
Georgia State University	151	44	0	0	0	0	0	0	3	2	1	0
Inst of Paper Science & Tech	279	6	1	1	0	0	0	0	0	0	0	0
Medical College of Georgia	226	19	0	0	0	0	0	0	0	0	0	0
Mercer University	334	0	0	0	0	0	0	0	0	0	0	0
University of Georgia	39	204	1	0	0	0	0	1	16	2	13	1
Hawaii, total	37	130	7	0	1	3	1	2	20	11	9	0
University of Hawaii at Manoa	73	130	7	0	1	3	1	2	20	11	9	0
Idaho, total	45	51	9	1	0	1	2	5	10	0	10	0
Idaho State University	256	11	3	0	0	1	0	2	0	0	0	0
University of Idaho	159	40	6	1	0	0	2	3	10	0	10	0

See explanatory information, if any, and SOURCE at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	Earth, atmos., & ocean sciences	Mathematics	Computer sciences	Biological & agricultural sciences			Psychology	Social sciences	Non-S&E, total	Grand total, all fields
				Total	Biological	Agricultural				
California, continued:										
University of La Verne	0	0	0	0	0	0	1	0	40	41
University of the Pacific	0	0	0	1	1	0	0	0	9	10
University of San Diego	0	0	0	0	0	0	0	1	21	22
University of San Francisco	0	0	0	0	0	0	3	1	54	58
University of Southern CA	8	2	12	35	35	0	12	55	185	403
Wright Institute, All Campuses	0	0	0	0	0	0	45	0	0	45
Colorado, total	52	18	15	121	93	28	49	75	231	764
Colorado School of Mines	13	1	0	0	0	0	0	3	0	37
Colorado State University	14	5	2	69	41	28	16	14	32	212
University of Colorado Boulder	24	11	10	52	52	0	11	48	101	375
University of Denver	1	0	3	0	0	0	14	9	43	74
University of Northern Colorado	0	1	0	0	0	0	8	1	55	66
Connecticut, total	10	18	13	136	129	7	44	95	204	638
University of Connecticut	4	9	7	53	50	3	22	30	73	254
University of New Haven	0	0	0	0	0	0	0	0	3	3
Wesleyan University	0	3	0	6	6	0	0	0	2	19
Yale University	6	6	6	77	73	4	22	65	126	362
Delaware, total	10	4	3	15	14	1	9	21	62	173
University of Delaware	10	4	3	15	14	1	9	21	33	144
Wilmington College	0	0	0	0	0	0	0	0	29	29
District of Columbia, total	2	9	12	53	52	1	53	94	206	504
American University	0	1	0	2	2	0	8	29	15	62
Catholic University of America	0	0	0	6	6	0	12	4	67	109
Gallaudet University	0	0	0	0	0	0	2	0	3	5
George Washington University	2	6	12	15	15	0	14	23	69	176
Georgetown University	0	0	0	16	16	0	5	27	29	80
Howard University	0	2	0	14	13	1	12	11	23	72
Florida, total	27	33	62	180	128	52	276	109	948	1,945
Barry University	0	0	0	0	0	0	0	0	10	10
Caribbean Ctr Adv Studies Miami	0	0	0	0	0	0	31	0	3	34
FL Agricultural and Mechanical U	0	0	0	1	1	0	0	0	0	2
Florida Atlantic University	0	0	0	1	1	0	2	4	26	49
Florida Institute of Technology	0	3	3	2	2	0	0	0	2	20
Florida International University	0	0	2	3	3	0	5	14	43	71
Florida State University	5	7	7	19	19	0	26	23	175	306
Nova Southeastern University	1	0	35	0	0	0	149	6	352	543
University of Central Florida	1	2	4	0	0	0	4	0	29	69
University of Florida	3	13	3	111	59	52	28	44	87	457
University of Miami	10	1	1	30	30	0	20	14	50	144
University of Sarasota	0	0	3	0	0	0	0	1	83	87
University of South Florida	7	7	4	13	13	0	11	3	88	153
Georgia, total	9	24	18	173	133	40	88	63	376	992
Clark Atlanta University	0	0	0	1	1	0	3	7	40	51
Emory University	0	5	0	32	32	0	1	19	58	135
Georgia Inst of Tech	8	11	17	9	9	0	10	0	7	262
Georgia Southern University	0	0	0	0	0	0	0	0	8	8
Georgia State University	0	0	1	5	5	0	26	9	93	137
Inst of Paper Science & Tech	0	0	0	5	0	5	0	0	0	6
Medical College of Georgia	0	0	0	19	19	0	0	0	3	22
Mercer University	0	0	0	0	0	0	0	0	2	2
University of Georgia	1	8	0	102	67	35	48	28	165	369
Hawaii, total	12	1	5	38	31	7	7	40	29	159
University of Hawaii at Manoa	12	1	5	38	31	7	7	40	29	159
Idaho, total	2	4	1	24	14	10	0	1	39	90
Idaho State University	0	2	0	5	5	0	0	1	8	19
University of Idaho	2	2	1	19	9	10	0	0	31	71

See explanatory information, if any, and SOURCE at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	S&E rank*	Total S&E	Engineering						Physical sciences			
			Total	Chemical	Civil	Electrical	Mechanical	Other engineering	Total	Physics & astronomy	Chemistry	Other physical sciences
Illinois, total	5	1,467	352	40	38	95	63	116	213	95	117	1
De Paul University	245	13	0	0	0	0	0	0	0	0	0	0
Finch U Hlth Sci/Chgo Med Sch	232	17	0	0	0	0	0	0	0	0	0	0
Illinois Institute Technology	108	73	32	7	6	7	2	10	5	2	3	0
Illinois State University	273	7	0	0	0	0	0	0	0	0	0	0
Inst for Clinical Social Work	320	1	0	0	0	0	0	0	0	0	0	0
Loyola University of Chicago	127	59	0	0	0	0	0	0	2	0	2	0
Lutheran Sch Theology at Chicago	334	0	0	0	0	0	0	0	0	0	0	0
Northern Illinois University	172	34	0	0	0	0	0	0	5	0	5	0
Northwestern University	22	285	94	10	9	13	20	42	33	14	19	0
Roosevelt University	334	0	0	0	0	0	0	0	0	0	0	0
Rush University	282	5	0	0	0	0	0	0	1	1	0	0
Southern Illinois U Carbondale	128	57	6	0	1	2	0	3	7	2	5	0
Southern Illinois U Edwardsville	334	0	0	0	0	0	0	0	0	0	0	0
University of Chicago	32	236	0	0	0	0	0	0	46	28	17	1
U of Illinois Chicago	62	155	45	3	1	11	17	13	28	8	20	0
U of Illinois Urbana-Champaign	3	525	175	20	21	62	24	48	86	40	46	0
Indiana, total	11	689	170	30	25	46	26	43	122	26	96	0
Ball State University	237	16	0	0	0	0	0	0	0	0	0	0
Indiana State University	229	18	0	0	0	0	0	0	0	0	0	0
Indiana U Bloomington	52	175	0	0	0	0	0	0	33	9	24	0
Indiana U Purdue U Indianapolis	320	1	0	0	0	0	0	0	0	0	0	0
Purdue University	12	389	139	20	22	37	21	39	77	11	66	0
University of Notre Dame	94	90	31	10	3	9	5	4	12	6	6	0
Iowa, total	23	423	104	15	11	24	22	32	70	19	51	0
Drake University	334	0	0	0	0	0	0	0	0	0	0	0
Iowa State University	29	252	66	11	6	19	12	18	45	15	30	0
Maharishi U of Management	289	4	0	0	0	0	0	0	0	0	0	0
University of Iowa	57	165	36	4	5	5	10	12	25	4	21	0
University of Northern Iowa	308	2	2	0	0	0	0	2	0	0	0	0
Kansas, total	28	287	50	4	15	9	5	17	44	9	35	0
Kansas State University	77	123	23	3	9	1	0	10	10	4	6	0
University of Kansas	67	138	15	1	6	4	2	2	30	5	25	0
Wichita State University	193	26	12	0	0	4	3	5	4	0	4	0
Kentucky, total	33	202	29	2	2	7	8	10	25	7	18	0
Southern Baptist Theological Sem	320	1	0	0	0	0	0	0	0	0	0	0
Spalding University	320	1	0	0	0	0	0	0	0	0	0	0
University of Kentucky	65	149	21	1	2	3	8	7	16	7	9	0
University of Louisville	136	51	8	1	0	4	0	3	9	0	9	0
Louisiana, total	26	321	49	14	8	11	4	12	39	10	28	1
Grambling State University	334	0	0	0	0	0	0	0	0	0	0	0
LA St U & A&M College	53	171	33	9	8	3	3	10	23	8	14	1
LA St U Shreveport	308	2	0	0	0	0	0	0	0	0	0	0
LA St U Medical Center	229	18	0	0	0	0	0	0	0	0	0	0
Louisiana Tech University	300	3	3	0	0	1	0	2	0	0	0	0
New Orleans Baptist Theol Sem	334	0	0	0	0	0	0	0	0	0	0	0
Northeast Louisiana University	289	4	0	0	0	0	0	0	1	0	1	0
Tulane University	102	77	9	5	0	3	1	0	9	2	7	0
University of New Orleans	196	25	0	0	0	0	0	0	6	0	6	0
U of Southwestern Louisiana	217	21	4	0	0	4	0	0	0	0	0	0
Maine, total	47	34	5	4	1	0	0	0	2	0	2	0
University of Maine	172	34	5	4	1	0	0	0	2	0	2	0

See explanatory information, if any, and SOURCE at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	Earth, atmos., & ocean sciences	Mathematics	Computer sciences	Biological & agricultural sciences			Psychology	Social sciences	Non-S&E, total	Grand total, all fields
				Total	Biological	Agricultural				
Illinois, total	23	69	65	300	263	37	176	269	793	2,260
De Paul University	0	0	2	0	0	0	11	0	3	16
Finch U Hlth Sci/Chgo Med Sch	0	0	0	8	8	0	9	0	1	18
Illinois Institute Technology	0	0	14	6	6	0	16	0	2	75
Illinois State University	0	2	0	3	3	0	1	1	44	51
Inst for Clinical Social Work	0	0	0	0	0	0	1	0	7	8
Loyola University of Chicago	0	1	0	23	23	0	26	7	69	128
Lutheran Sch Theology at Chicago	0	0	0	0	0	0	0	0	2	2
Northern Illinois University	0	2	0	2	2	0	12	13	82	116
Northwestern University	4	16	9	44	44	0	32	53	86	371
Roosevelt University	0	0	0	0	0	0	0	0	13	13
Rush University	0	0	0	3	3	0	0	1	21	26
Southern Illinois U Carbondale	0	2	2	12	10	2	15	13	81	138
Southern Illinois U Edwardsville	0	0	0	0	0	0	0	0	4	4
University of Chicago	7	20	5	51	51	0	10	97	132	368
U of Illinois Chicago	3	9	6	42	42	0	6	16	65	220
U of Illinois Urbana-Champaign	9	17	27	106	71	35	37	68	181	706
Indiana, total	11	30	23	156	119	37	67	110	395	1,084
Ball State University	0	0	0	0	0	0	12	4	33	49
Indiana State University	0	0	0	3	3	0	12	3	9	27
Indiana U Bloomington	4	12	10	44	44	0	19	53	205	380
Indiana U Purdue U Indianapolis	0	0	0	1	1	0	0	0	14	15
Purdue University	7	14	10	90	53	37	19	33	107	496
University of Notre Dame	0	4	3	18	18	0	5	17	27	117
Iowa, total	7	28	7	114	79	35	38	55	226	649
Drake University	0	0	0	0	0	0	0	0	6	6
Iowa State University	2	13	4	75	40	35	22	25	48	300
Maharishi U of Management	0	0	0	3	3	0	1	0	1	5
University of Iowa	5	15	3	36	36	0	15	30	162	327
University of Northern Iowa	0	0	0	0	0	0	0	0	9	11
Kansas, total	5	11	3	87	62	25	48	39	198	485
Kansas State University	1	6	3	52	27	25	12	16	38	161
University of Kansas	4	0	0	35	35	0	31	23	149	287
Wichita State University	0	5	0	0	0	0	5	0	11	37
Kentucky, total	2	16	1	81	69	12	29	19	140	342
Southern Baptist Theological Sem	0	0	0	0	0	0	0	1	29	30
Spalding University	0	0	0	0	0	0	0	1	9	10
University of Kentucky	2	16	0	61	49	12	18	15	78	227
University of Louisville	0	0	1	20	20	0	11	2	24	75
Louisiana, total	7	18	16	113	96	17	36	43	234	555
Grambling State University	0	0	0	0	0	0	0	0	10	10
LA St U & A&M College	7	5	6	56	39	17	22	19	87	258
LA St U Shreveport	0	0	0	2	2	0	0	0	0	2
LA St U Medical Center	0	0	0	18	18	0	0	0	5	23
Louisiana Tech University	0	0	0	0	0	0	0	0	6	9
New Orleans Baptist Theol Sem	0	0	0	0	0	0	0	0	25	25
Northeast Louisiana University	0	0	0	3	3	0	0	0	7	11
Tulane University	0	9	3	28	28	0	6	13	49	126
University of New Orleans	0	0	0	0	0	0	8	11	36	61
U of Southwestern Louisiana	0	4	7	6	6	0	0	0	9	30
Maine, total	4	0	0	16	10	6	7	0	16	50
University of Maine	4	0	0	16	10	6	7	0	16	50

See explanatory information, if any, and SOURCE at end of table.

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Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	S&E rank*	Total S&E	Engineering						Physical sciences			
			Total	Chemical	Civil	Electrical	Mechanical	Other engineering	Total	Physics & astronomy	Chemistry	Other physical sciences
Maryland, total	12	657	144	14	10	49	35	36	93	55	38	0
Johns Hopkins University	30	243	43	6	5	8	8	16	33	20	13	0
Loyola College	289	4	0	0	0	0	0	0	0	0	0	0
Morgan State University	334	0	0	0	0	0	0	0	0	0	0	0
Peabody Inst of Johns Hopkins U	334	0	0	0	0	0	0	0	0	0	0	0
Uniformed Services U of Hlth Sci	261	10	0	0	0	0	0	0	0	0	0	0
U of Maryland Baltimore	161	39	0	0	0	0	0	0	3	0	3	0
U of Maryland Baltimore County	136	51	19	1	0	7	9	2	4	0	4	0
U of Maryland College Park	18	308	82	7	5	34	18	18	53	35	18	0
U of Maryland Eastern Shore	308	2	0	0	0	0	0	0	0	0	0	0
Massachusetts, total	4	1,533	377	75	26	95	56	125	248	128	119	1
American International College	334	0	0	0	0	0	0	0	0	0	0	0
Boston College	168	36	0	0	0	0	0	0	7	5	2	0
Boston University	56	170	14	1	0	4	4	5	23	15	8	0
Brandeis University	111	68	1	0	0	0	0	1	8	3	5	0
Clark University	193	26	1	1	0	0	0	0	3	1	2	0
Harvard University	16	332	12	0	2	1	0	9	71	38	33	0
MA Col Pharmacy & Allied Health	308	2	0	0	0	0	0	0	0	0	0	0
Massachusetts Institute of Tech	6	462	229	45	12	52	36	84	69	40	29	0
New England Conserv of Music	334	0	0	0	0	0	0	0	0	0	0	0
Northeastern University	99	83	23	0	2	10	6	5	15	6	9	0
Simmons College	334	0	0	0	0	0	0	0	0	0	0	0
Smith College	334	0	0	0	0	0	0	0	0	0	0	0
Springfield College	334	0	0	0	0	0	0	0	0	0	0	0
Tufts University	114	66	7	1	0	4	2	0	6	3	3	0
U of Massachusetts Amherst	44	187	54	22	4	14	3	11	37	13	23	1
U of Massachusetts Boston	245	13	0	0	0	0	0	0	0	0	0	0
U of Massachusetts Lowell	170	35	13	5	1	4	2	1	7	2	5	0
U of Massachusetts Worcester	193	26	0	0	0	0	0	0	0	0	0	0
Worcester Polytechnic Institute	191	27	23	0	5	6	3	9	2	2	0	0
Michigan, total	8	1,027	275	34	28	63	56	94	150	60	90	0
Andrews University	300	3	0	0	0	0	0	0	0	0	0	0
Central Michigan University	289	4	0	0	0	0	0	0	0	0	0	0
Eastern Michigan University	334	0	0	0	0	0	0	0	0	0	0	0
Michigan State University	19	305	46	13	9	10	8	6	46	19	27	0
Michigan Technological U	147	46	22	2	0	2	10	8	9	6	3	0
Oakland University	232	17	12	0	0	0	0	12	1	1	0	0
University of Detroit Mercy	279	6	1	0	0	0	1	0	0	0	0	0
University of Michigan Ann Arbor	4	479	175	16	18	44	35	62	67	27	40	0
Wayne State University	71	132	19	3	1	7	2	6	25	5	20	0
Western Michigan University	170	35	0	0	0	0	0	0	2	2	0	0
Minnesota, total	19	481	99	16	13	25	21	24	63	24	39	0
Luther NW Theological Seminary	334	0	0	0	0	0	0	0	0	0	0	0
Mayo Sch Health-Related Sciences	223	20	1	0	0	0	0	1	0	0	0	0
U of Minnesota Twin Cities	8	450	98	16	13	25	21	23	63	24	39	0
University of St Thomas	334	0	0	0	0	0	0	0	0	0	0	0
Walden University	256	11	0	0	0	0	0	0	0	0	0	0
Mississippi, total	36	159	25	1	1	4	3	16	27	2	25	0
Delta State University	334	0	0	0	0	0	0	0	0	0	0	0
Jackson State University	282	5	0	0	0	0	0	0	0	0	0	0
Mississippi State University	121	62	14	1	0	2	1	10	4	0	4	0
Reformed Theological Sem	334	0	0	0	0	0	0	0	0	0	0	0
U of Mississippi	154	42	10	0	1	2	2	5	12	2	10	0
U of Mississippi Med Ctr	245	13	0	0	0	0	0	0	0	0	0	0
U of Southern Mississippi	165	37	1	0	0	0	0	1	11	0	11	0

See explanatory information, if any, and SOURCE at end of table

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	Earth, atmos., & ocean sciences	Mathematics	Computer sciences	Biological & agricultural sciences			Psychology	Social sciences	Non-S&E, total	Grand total, all fields
				Total	Biological	Agricultural				
Maryland, total	17	36	21	171	164	7	72	103	345	1,002
Johns Hopkins University	9	6	3	84	84	0	14	51	120	363
Loyola College	0	0	0	0	0	0	4	0	0	4
Morgan State University	0	0	0	0	0	0	0	0	4	4
Peabody Inst of Johns Hopkins U	0	0	0	0	0	0	0	0	22	22
Uniformed Services U of Hlth Sci	0	0	0	6	6	0	4	0	0	10
U of Maryland Baltimore	0	0	0	35	35	0	1	0	27	66
U of Maryland Baltimore County	0	3	9	4	4	0	6	6	4	55
U of Maryland College Park	8	27	9	40	34	6	43	46	168	476
U of Maryland Eastern Shore	0	0	0	2	1	1	0	0	0	2
Massachusetts, total	32	59	53	363	355	8	101	300	641	2,174
American International College	0	0	0	0	0	0	0	0	6	6
Boston College	0	0	0	13	13	0	6	10	64	100
Boston University	4	2	6	59	59	0	24	38	108	278
Brandeis University	0	5	4	21	21	0	2	27	22	90
Clark University	0	0	0	2	2	0	8	12	5	31
Harvard University	7	16	7	107	107	0	14	98	228	560
MA Col Pharmacy & Allied Health	0	0	0	2	2	0	0	0	0	2
Massachusetts Institute of Tech	19	24	17	52	52	0	2	50	30	492
New England Conserv of Music	0	0	0	0	0	0	0	0	4	4
Northeastern University	0	3	2	8	8	0	10	22	4	87
Simmons College	0	0	0	0	0	0	0	0	8	8
Smith College	0	0	0	0	0	0	0	0	11	11
Springfield College	0	0	0	0	0	0	0	0	7	7
Tufts University	1	1	1	33	33	0	6	11	15	81
U of Massachusetts Amherst	1	8	8	32	24	8	21	26	111	298
U of Massachusetts Boston	0	0	0	0	0	0	8	5	2	15
U of Massachusetts Lowell	0	0	8	6	6	0	0	1	16	51
U of Massachusetts Worcester	0	0	0	26	26	0	0	0	0	26
Worcester Polytechnic Institute	0	0	0	2	2	0	0	0	0	27
Michigan, total	18	52	23	218	171	47	122	169	482	1,509
Andrews University	0	0	0	0	0	0	3	0	16	19
Central Michigan University	0	0	0	0	0	0	4	0	0	4
Eastern Michigan University	0	0	0	0	0	0	0	0	5	5
Michigan State University	0	12	9	92	58	34	38	62	131	436
Michigan Technological U	1	0	0	14	7	7	0	0	5	51
Oakland University	0	0	0	4	4	0	0	0	6	23
University of Detroit Mercy	0	0	0	0	0	0	5	0	0	6
University of Michigan Ann Arbor	14	31	10	63	57	6	38	81	208	687
Wayne State University	0	3	4	44	44	0	21	16	88	220
Western Michigan University	3	6	0	1	1	0	13	10	23	58
Minnesota, total	5	18	20	147	108	39	55	74	362	843
Luther NW Theological Seminary	0	0	0	0	0	0	0	0	5	5
Mayo Sch Health-Related Sciences	0	0	0	19	19	0	0	0	0	20
U of Minnesota Twin Cities	5	18	20	128	89	39	44	74	274	724
University of St Thomas	0	0	0	0	0	0	0	0	20	20
Walden University	0	0	0	0	0	0	11	0	63	74
Mississippi, total	5	2	7	50	32	18	28	15	191	350
Delta State University	0	0	0	0	0	0	0	0	1	1
Jackson State University	3	0	0	0	0	0	0	2	13	18
Mississippi State University	0	0	1	24	6	18	6	13	41	103
Reformed Theological Sem	0	0	0	0	0	0	0	0	3	3
U of Mississippi	2	1	3	9	9	0	5	0	58	100
U of Mississippi Med Ctr	0	0	0	13	13	0	0	0	0	13
U of Southern Mississippi	0	1	3	4	4	0	17	0	75	112

See explanatory information, if any, and SOURCE at end of table.

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Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	S&E rank*	Total S&E	Engineering						Physical sciences			
			Total	Chemical	Civil	Electrical	Mechanical	Other engineering	Total	Physics & astronomy	Chemistry	Other physical sciences
Missouri, total	20	476	109	11	13	27	8	50	71	21	50	0
Concordia Seminary	334	0	0	0	0	0	0	0	0	0	0	0
Midwestern Baptist Theol Sem	334	0	0	0	0	0	0	0	0	0	0	0
St Louis University	157	41	0	0	0	0	0	0	0	0	0	0
University Missouri Columbia	60	157	30	5	1	9	2	13	13	8	5	0
University Missouri Kansas City	217	21	1	0	0	1	0	0	5	1	4	0
University Missouri Rolla	124	61	42	0	5	7	4	26	13	2	11	0
University Missouri St Louis	196	25	0	0	0	0	0	0	7	0	7	0
Washington University	53	171	36	6	7	10	2	11	33	10	23	0
Montana, total	42	68	4	1	0	1	1	1	12	6	6	0
Montana St University Bozeman	181	30	4	1	0	1	1	1	11	6	5	0
University of Montana	163	38	0	0	0	0	0	0	1	0	1	0
Nebraska, total	34	189	14	1	8	1	0	4	18	8	10	0
Creighton University	308	2	0	0	0	0	0	0	0	0	0	0
U of Nebraska at Lincoln	58	164	14	1	8	1	0	4	17	8	9	0
U of Nebraska at Omaha	308	2	0	0	0	0	0	0	0	0	0	0
U of Nebraska Medical Center	217	21	0	0	0	0	0	0	1	0	1	0
Nevada, total	42	68	9	0	6	1	0	2	9	3	6	0
University of Nevada-Las Vegas	282	5	1	0	1	0	0	0	1	1	0	0
University of Nevada-Reno	120	63	8	0	5	1	0	2	8	2	6	0
New Hampshire, total	40	97	10	0	0	4	2	4	26	10	16	0
Dartmouth College	149	45	6	0	0	2	0	4	15	5	10	0
University of New Hampshire	134	52	4	0	0	2	2	0	11	5	6	0
New Jersey, total	16	562	139	27	12	43	26	31	82	44	38	0
Drew University	334	0	0	0	0	0	0	0	0	0	0	0
Fairleigh Dickinson U	273	7	0	0	0	0	0	0	0	0	0	0
New Jersey Institute Technology	176	31	24	3	2	13	5	1	1	0	1	0
Princeton Theological Seminary	334	0	0	0	0	0	0	0	0	0	0	0
Princeton University	53	171	47	11	7	14	9	6	40	28	12	0
Rutgers St U NJ New Brunswick	26	257	55	11	3	14	8	19	29	14	15	0
Rutgers St U NJ Newark Campus	217	21	0	0	0	0	0	0	2	0	2	0
Seton Hall University	203	24	0	0	0	0	0	0	7	0	7	0
Stevens Institute of Technology	181	30	13	2	0	2	4	5	3	2	1	0
U of Medicine & Dentistry of NJ	217	21	0	0	0	0	0	0	0	0	0	0
New Mexico, total	33	202	57	15	2	20	4	16	39	24	15	0
New Mexico Inst Mining & Tech	245	13	6	3	0	0	0	3	1	1	0	0
New Mexico State University	113	67	13	2	0	3	0	8	18	9	9	0
U of New Mexico, All Campuses	78	122	38	10	2	17	4	5	20	14	6	0
New York, total	2	2,377	374	41	42	129	63	99	309	159	148	2
Adelphi University	207	23	0	0	0	0	0	0	0	0	0	0
Albany Medical College	245	13	0	0	0	0	0	0	0	0	0	0
Alfred University	261	10	10	0	0	0	0	10	0	0	0	0
Clarkson University	213	22	10	4	3	1	2	0	10	1	9	0
Columbia U in City of New York	22	285	41	4	3	14	3	17	39	20	18	1
Cornell U Endowed Colleges	11	394	84	9	11	21	12	31	64	37	27	0
Cornell U Medical Campus	176	31	0	0	0	0	0	0	0	0	0	0
CUNY Grad School & U Center	35	221	18	1	1	8	3	5	29	15	14	0
Fordham University	139	49	0	0	0	0	0	0	0	0	0	0
Hebrew Union Col-Jewish Inst Rel	334	0	0	0	0	0	0	0	0	0	0	0
Hofstra University	176	31	0	0	0	0	0	0	0	0	0	0
Jewish Theological Sem America	334	0	0	0	0	0	0	0	0	0	0	0
Juilliard School	334	0	0	0	0	0	0	0	0	0	0	0
Long Island University Brooklyn	261	10	0	0	0	0	0	0	0	0	0	0
Manhattan School of Music	334	0	0	0	0	0	0	0	0	0	0	0
New School University	130	56	0	0	0	0	0	0	0	0	0	0
New York Medical College	282	5	0	0	0	0	0	0	0	0	0	0
New York University	59	163	2	0	0	0	0	2	12	6	6	0

See explanatory information, if any, and SOURCE at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	Earth, atmos., & ocean sciences	Mathematics	Computer sciences	Biological & agricultural sciences			Psychology	Social sciences	Non-S&E, total	Grand total, all fields
				Total	Biological	Agricultural				
Missouri, total	15	15	2	136	117	19	73	55	304	780
Concordia Seminary	0	0	0	0	0	0	0	0	1	1
Midwestern Baptist Theol Sem	0	0	0	0	0	0	0	0	17	17
St Louis University	2	0	0	14	14	0	21	4	87	128
University Missouri Columbia	5	7	0	50	32	18	24	28	118	275
University Missouri Kansas City	0	0	0	11	11	0	4	0	33	54
University Missouri Rolla	0	4	1	1	1	0	0	0	0	61
University Missouri St Louis	0	0	0	3	3	0	11	4	9	34
Washington University	8	4	1	57	56	1	13	19	39	210
Montana, total	2	4	0	36	24	12	10	0	29	97
Montana St University Bozeman	0	4	0	11	8	3	0	0	20	50
University of Montana	2	0	0	25	16	9	10	0	9	47
Nebraska, total	4	11	3	85	42	43	25	29	125	314
Creighton University	0	0	0	2	2	0	0	0	0	2
U of Nebraska at Lincoln	4	11	3	63	20	43	25	27	118	282
U of Nebraska at Omaha	0	0	0	0	0	0	0	2	4	6
U of Nebraska Medical Center	0	0	0	20	20	0	0	0	3	24
Nevada, total	17	0	0	13	13	0	12	8	18	86
University of Nevada-Las Vegas	0	0	0	1	1	0	0	2	9	14
University of Nevada-Reno	17	0	0	12	12	0	12	6	9	72
New Hampshire, total	5	4	4	38	31	7	6	4	22	119
Dartmouth College	1	1	3	17	17	0	2	0	0	45
University of New Hampshire	4	3	1	21	14	7	4	4	22	74
New Jersey, total	21	37	19	129	112	17	57	78	268	830
Drew University	0	0	0	0	0	0	0	0	30	30
Fairleigh Dickinson U	0	0	0	0	0	0	7	0	0	7
New Jersey Institute Technology	2	1	3	0	0	0	0	0	0	31
Princeton Theological Seminary	0	0	0	0	0	0	0	0	13	13
Princeton University	5	14	5	17	17	0	4	39	93	264
Rutgers St U NJ New Brunswick	14	19	7	80	63	17	20	33	107	364
Rutgers St U NJ Newark Campus	0	1	1	10	10	0	1	6	11	32
Seton Hall University	0	0	0	1	1	0	16	0	13	37
Stevens Institute of Technology	0	2	3	0	0	0	9	0	1	31
U of Medicine & Dentistry of NJ	0	0	0	21	21	0	0	0	0	21
New Mexico, total	7	8	6	43	29	14	25	17	109	311
New Mexico Inst Mining & Tech	6	0	0	0	0	0	0	0	0	13
New Mexico State University	0	4	4	23	9	14	5	0	27	94
U of New Mexico, All Campuses	1	4	2	20	20	0	20	17	82	204
New York, total	45	111	99	608	557	51	395	436	1,407	3,784
Adelphi University	0	0	0	0	0	0	23	0	23	46
Albany Medical College	0	0	0	13	13	0	0	0	0	13
Alfred University	0	0	0	0	0	0	0	0	0	10
Clarkson University	0	1	0	1	1	0	0	0	0	22
Columbia U in City of New York	9	8	10	70	70	0	44	64	177	462
Cornell U Endowed Colleges	7	17	13	119	79	40	17	73	82	476
Cornell U Medical Campus	0	0	0	31	31	0	0	0	0	31
CUNY Grad School & U Center	6	10	6	44	44	0	51	57	112	333
Fordham University	0	0	0	7	7	0	33	9	83	132
Hebrew Union Col-Jewish Inst Rel	0	0	0	0	0	0	0	0	5	5
Hofstra University	0	0	0	0	0	0	31	0	2	33
Jewish Theological Sem America	0	0	0	0	0	0	0	0	12	12
Juilliard School	0	0	0	0	0	0	0	0	16	16
Long Island University Brooklyn	0	0	0	0	0	0	10	0	0	10
Manhattan School of Music	0	0	0	0	0	0	0	0	9	9
New School University	0	0	0	0	0	0	24	32	5	61
New York Medical College	0	0	0	5	5	0	0	0	0	5
New York University	2	13	10	53	52	1	33	38	267	430

See explanatory information, if any, and SOURCE at end of table.

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Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	S&E rank*	Total S&E	Engineering						Physical sciences			
			Total	Chemical	Civil	Electrical	Mechanical	Other engineering	Total	Physics & astronomy	Chemistry	Other physical sciences
New York, continued:												
Pace University New York Campus	334	0	0	0	0	0	0	0	0	0	0	0
Polytechnic University	161	39	28	3	3	19	1	2	6	2	4	0
Rensselaer Polytechnic Institute	81	116	76	8	9	26	18	15	12	7	5	0
Rockefeller University	207	23	0	0	0	0	0	0	1	1	0	0
St John's U (Jamaica, NY)	203	24	0	0	0	0	0	0	0	0	0	0
SUNY at Albany	90	95	0	0	0	0	0	0	13	6	7	0
SUNY at Binghamton	114	66	6	0	0	3	1	2	6	0	6	0
SUNY at Buffalo	50	177	40	6	11	12	10	1	23	5	18	0
SUNY at Stony Brook	40	195	27	1	0	9	10	7	38	21	16	1
SUNY Col Environ Sci & Forestry	239	15	1	0	0	0	0	1	1	0	1	0
SUNY Col of Optometry	320	1	0	0	0	0	0	0	0	0	0	0
SUNY Health Sci Ctr Brooklyn	252	12	0	0	0	0	0	0	0	0	0	0
SUNY Health Sci Ctr Syracuse	279	6	0	0	0	0	0	0	0	0	0	0
Syracuse University	83	108	14	1	1	8	2	2	11	8	3	0
Teachers College Columbia U	282	5	0	0	0	0	0	0	0	0	0	0
Union College	320	1	1	0	0	0	0	1	0	0	0	0
Union Theological Seminary	320	1	0	0	0	0	0	0	0	0	0	0
University of Rochester	62	155	16	4	0	8	1	3	44	30	14	0
Yeshiva University	196	25	0	0	0	0	0	0	0	0	0	0
North Carolina, total	10	740	143	12	20	38	12	61	102	33	69	0
Duke University	45	182	31	0	6	8	5	12	24	13	11	0
East Carolina University	252	12	0	0	0	0	0	0	0	0	0	0
North Carolina A&T State U	300	3	3	0	0	2	1	0	0	0	0	0
North Carolina State U Raleigh	28	254	94	12	8	28	6	40	18	10	8	0
U of North Carolina Chapel Hill	32	236	15	0	6	0	0	9	53	8	45	0
U of North Carolina Greensboro	217	21	0	0	0	0	0	0	0	0	0	0
Wake Forest University	174	32	0	0	0	0	0	0	7	2	5	0
North Dakota, total	43	58	4	0	0	0	2	2	7	1	6	0
North Dakota State University	183	29	1	0	0	0	0	1	4	0	4	0
University of North Dakota	183	29	3	0	0	0	2	1	3	1	2	0
Ohio, total	7	1,124	305	56	24	58	54	113	188	66	122	0
Air Force Institute Technology	183	29	23	0	0	10	1	12	4	4	0	0
Bowling Green State University	147	46	0	0	0	0	0	0	9	0	9	0
Case Western Reserve University	74	129	46	12	1	6	7	20	20	6	14	0
Cleveland State University	232	17	6	3	0	2	1	0	6	0	6	0
Hebrew Union Col-Jewish Inst Rel	334	0	0	0	0	0	0	0	0	0	0	0
Kent State University Geauga	102	77	0	0	0	0	0	0	11	7	4	0
Medical College of Ohio	213	22	0	0	0	0	0	0	0	0	0	0
Miami University Oxford Campus	183	29	0	0	0	0	0	0	3	0	3	0
Ohio State University	10	407	89	7	10	17	21	34	66	32	34	0
Ohio University	134	52	11	1	0	5	1	4	9	5	4	0
University of Akron	87	102	42	26	2	2	8	4	33	2	31	0
University of Cincinnati	62	155	61	4	10	11	7	29	20	7	13	0
University of Dayton	232	17	15	0	0	4	6	5	1	1	0	0
University of Toledo	187	28	11	3	1	0	2	5	6	2	4	0
Wright State University	240	14	1	0	0	1	0	0	0	0	0	0
Youngstown State University	334	0	0	0	0	0	0	0	0	0	0	0
Oklahoma, total	31	217	57	18	7	12	7	13	16	4	12	0
Oklahoma State University	93	92	21	3	3	5	2	8	4	2	2	0
University of Oklahoma Norman	85	106	27	10	4	7	1	5	12	2	10	0
University of Tulsa	226	19	9	5	0	0	4	0	0	0	0	0
Oregon, total	29	283	38	1	11	13	2	11	38	17	19	2
Oregon Grad Inst Science & Tech	245	13	6	0	2	3	0	1	2	2	0	0
Oregon Health Sciences U	196	25	0	0	0	0	0	0	0	0	0	0
Oregon State University	66	145	23	1	8	8	2	4	17	3	12	2
Portland State University	196	25	9	0	1	2	0	6	4	2	2	0
University of Oregon	106	75	0	0	0	0	0	0	15	10	5	0

See explanatory information, if any, and SOURCE at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	Earth, atmos., & ocean sciences	Mathematics	Computer sciences	Biological & agricultural sciences			Psychology	Social sciences	Non-S&E, total	Grand total, all fields
				Total	Biological	Agricultural				
New York, continued:										
Pace University New York Campus	0	0	0	0	0	0	0	0	5	5
Polytechnic University	0	0	5	0	0	0	0	0	0	39
Rensselaer Polytechnic Institute	2	9	14	2	2	0	0	1	12	128
Rockefeller University	0	0	0	22	22	0	0	0	1	24
St John's U (Jamaica, NY)	0	0	0	4	4	0	19	1	24	48
SUNY at Albany	3	10	2	16	15	1	28	23	79	174
SUNY at Binghamton	0	7	8	3	3	0	7	29	15	81
SUNY at Buffalo	6	6	4	45	45	0	29	24	117	294
SUNY at Stony Brook	8	23	9	57	56	1	14	19	69	264
SUNY Col Environ Sci & Forestry	0	0	0	12	4	8	0	1	0	15
SUNY Col of Optometry	0	0	0	1	1	0	0	0	0	1
SUNY Health Sci Ctr Brooklyn	0	0	0	12	12	0	0	0	1	13
SUNY Health Sci Ctr Syracuse	0	0	0	6	6	0	0	0	0	6
Syracuse University	0	1	10	8	8	0	20	44	55	163
Teachers College Columbia U	0	0	0	1	1	0	1	3	163	168
Union College	0	0	0	0	0	0	0	0	2	3
Union Theological Seminary	0	0	0	0	0	0	1	0	6	7
University of Rochester	2	6	8	51	51	0	10	18	64	219
Yeshiva University	0	0	0	25	25	0	0	0	1	26
North Carolina, total	23	51	18	238	204	34	66	99	344	1,084
Duke University	8	7	1	66	65	1	13	32	61	243
East Carolina University	0	0	0	12	12	0	0	0	3	15
North Carolina A&T State U	0	0	0	0	0	0	0	0	0	3
North Carolina State U Raleigh	7	25	5	71	39	32	11	23	68	322
U of North Carolina Chapel Hill	8	19	12	63	62	1	23	43	155	391
U of North Carolina Greensboro	0	0	0	1	1	0	19	1	57	78
Wake Forest University	0	0	0	25	25	0	0	0	0	32
North Dakota, total	1	3	1	30	21	9	12	0	27	85
North Dakota State University	0	3	1	20	12	8	0	0	2	31
University of North Dakota	1	0	0	10	9	1	12	0	25	54
Ohio, total	15	46	23	270	250	20	179	98	739	1,863
Air Force Institute Technology	0	2	0	0	0	0	0	0	0	29
Bowling Green State University	0	8	0	7	7	0	12	10	47	93
Case Western Reserve University	0	1	6	33	33	0	12	11	48	177
Cleveland State University	0	0	0	3	3	0	0	2	16	33
Hebrew Union Col-Jewish Inst Rel	0	0	0	0	0	0	0	0	5	5
Kent State University Geauga	2	8	1	11	11	0	38	6	79	156
Medical College of Ohio	0	0	0	22	22	0	0	0	1	23
Miami University Oxford Campus	0	0	0	9	9	0	16	1	22	51
Ohio State University	10	20	12	119	99	20	39	52	257	664
Ohio University	0	3	0	12	12	0	16	1	81	133
University of Akron	0	0	0	1	1	0	20	6	25	127
University of Cincinnati	3	2	0	42	42	0	19	8	112	267
University of Dayton	0	0	0	1	1	0	0	0	10	27
University of Toledo	0	2	0	2	2	0	6	1	35	63
Wright State University	0	0	4	8	8	0	1	0	0	14
Youngstown State University	0	0	0	0	0	0	0	0	1	1
Oklahoma, total	20	5	5	54	41	13	31	29	188	405
Oklahoma State University	4	4	1	29	16	13	12	17	105	197
University of Oklahoma Norman	12	1	2	23	23	0	17	12	81	187
University of Tulsa	4	0	2	2	2	0	2	0	2	21
Oregon, total	16	9	8	123	88	35	18	33	144	427
Oregon Grad Inst Science & Tech	0	0	2	3	3	0	0	0	0	13
Oregon Health Sciences U	0	0	0	24	24	0	1	0	4	29
Oregon State University	9	4	4	77	42	35	2	9	42	187
Portland State University	2	2	0	1	1	0	2	5	13	38
University of Oregon	5	3	2	18	18	0	13	19	85	160

See explanatory information, if any, and SOURCE at end of table.

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Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	S&E rank*	Total S&E	Engineering						Physical sciences			
			Total	Chemical	Civil	Electrical	Mechanical	Other engineering	Total	Physics & astronomy	Chemistry	Other physical sciences
Pennsylvania, total	6	1,364	404	57	32	93	61	161	163	62	100	1
Allegheny Univ of the Hlth Sci	187	28	0	0	0	0	0	0	0	0	0	0
Bryn Mawr College	273	7	0	0	0	0	0	0	1	1	0	0
Carnegie Mellon University	51	176	99	12	11	33	13	30	13	8	4	1
Drexel University	144	47	33	2	3	8	9	11	5	3	2	0
Duquesne University	273	7	0	0	0	0	0	0	4	0	4	0
Indiana University of PA	270	8	0	0	0	0	0	0	0	0	0	0
Lehigh University	116	65	35	10	3	6	5	11	8	6	2	0
Pennsylvania State U	13	380	144	18	9	21	25	71	53	24	29	0
Philadelphia Col Pharmacy & Sci	270	8	0	0	0	0	0	0	4	0	4	0
Temple University	79	119	2	0	1	1	0	0	11	2	9	0
Thomas Jefferson University	226	19	0	0	0	0	0	0	0	0	0	0
University of Pennsylvania	24	282	46	7	1	11	5	22	35	15	20	0
University of Pittsburgh	38	214	45	8	4	13	4	16	25	3	22	0
Villanova University	289	4	0	0	0	0	0	0	4	0	4	0
Westminster Theological Seminary	334	0	0	0	0	0	0	0	0	0	0	0
Widener U Pennsylvania Campus	334	0	0	0	0	0	0	0	0	0	0	0
Rhode Island, total	35	183	17	0	0	5	10	2	43	23	20	0
Brown University	75	127	12	0	0	3	7	2	32	20	12	0
Salve Regina University	334	0	0	0	0	0	0	0	0	0	0	0
University of Rhode Island	130	56	5	0	0	2	3	0	11	3	8	0
South Carolina, total	32	211	37	9	5	9	7	7	28	4	24	0
Clemson University	95	88	29	5	4	7	6	7	12	2	10	0
Medical U South Carolina	207	23	0	0	0	0	0	0	3	0	3	0
South Carolina State University	334	0	0	0	0	0	0	0	0	0	0	0
U of South Carolina at Columbia	88	100	8	4	1	2	1	0	13	2	11	0
South Dakota, total	49	24	2	0	0	0	0	2	2	0	2	0
South Dakota Sch of Mines & Tech	308	2	2	0	0	0	0	2	0	0	0	0
South Dakota State University	261	10	0	0	0	0	0	0	2	0	2	0
University of South Dakota	252	12	0	0	0	0	0	0	0	0	0	0
Tennessee, total	25	333	63	6	6	6	13	32	31	13	17	1
East Tennessee State University	282	5	0	0	0	0	0	0	0	0	0	0
Meharry Medical College	240	14	0	0	0	0	0	0	0	0	0	0
Mid-America Baptist Theol Sem	334	0	0	0	0	0	0	0	0	0	0	0
Middle Tennessee State U	300	3	0	0	0	0	0	0	1	0	1	0
Tennessee State University	273	7	0	0	0	0	0	0	0	0	0	0
Tennessee Technological U	300	3	3	1	0	0	1	1	0	0	0	0
University of Memphis	163	38	7	0	3	0	0	4	2	0	2	0
University Tennessee Knoxville	69	135	34	3	1	3	6	21	15	8	6	1
University Tennessee Memphis	267	9	0	0	0	0	0	0	0	0	0	0
Vanderbilt University	79	119	19	2	2	3	6	6	13	5	8	0
Texas, total	3	1,667	407	66	50	101	73	117	212	89	122	1
Baylor College of Medicine	152	43	0	0	0	0	0	0	0	0	0	0
Baylor University	245	13	0	0	0	0	0	0	0	0	0	0
Dallas Theological Seminary	334	0	0	0	0	0	0	0	0	0	0	0
Lamar University	320	1	1	1	0	0	0	0	0	0	0	0
Rice University	92	93	33	14	2	5	4	8	9	5	4	0
Sam Houston State University	273	7	0	0	0	0	0	0	0	0	0	0
Southern Methodist University	154	42	16	0	1	9	3	3	2	2	0	0
Southwestern Baptist Theol Sem	300	3	0	0	0	0	0	0	0	0	0	0
Stephen F Austin State U	320	1	0	0	0	0	0	0	0	0	0	0

See explanatory information, if any, and SOURCE at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	Earth, atmos., & ocean sciences	Mathematics	Computer sciences	Biological & agricultural sciences			Psychology	Social sciences	Non-S&E, total	Grand total, all fields
				Total	Biological	Agricultural				
Pennsylvania, total	16	43	68	271	252	19	165	234	870	2,234
Allegheny Univ of the Hlth Sci	0	0	0	12	12	0	16	0	2	30
Bryn Mawr College	0	0	0	2	2	0	2	2	17	24
Carnegie Mellon University	0	8	33	5	5	0	3	15	28	204
Drexel University	0	0	3	2	2	0	4	0	5	52
Duquesne University	0	0	0	1	1	0	2	0	7	14
Indiana University of PA	0	0	0	0	0	0	1	7	38	46
Lehigh University	2	4	2	5	5	0	7	2	31	96
Pennsylvania State U	11	6	4	77	59	18	42	43	217	597
Philadelphia Col Pharmacy & Sci	0	0	0	4	4	0	0	0	2	10
Temple University	0	8	4	20	20	0	47	27	173	292
Thomas Jefferson University	0	0	0	19	19	0	0	0	0	19
University of Pennsylvania	1	9	9	78	78	0	16	88	154	436
University of Pittsburgh	2	8	13	46	45	1	25	50	159	373
Villanova University	0	0	0	0	0	0	0	0	1	5
Westminster Theological Seminary	0	0	0	0	0	0	0	0	15	15
Widener U Pennsylvania Campus	0	0	0	0	0	0	0	0	21	21
Rhode Island, total	22	21	3	23	20	3	22	32	66	249
Brown University	8	19	3	15	15	0	7	31	47	174
Salve Regina University	0	0	0	0	0	0	0	0	3	3
University of Rhode Island	14	2	0	8	5	3	15	1	16	72
South Carolina, total	10	11	5	76	68	8	17	27	158	369
Clemson University	0	2	2	38	30	8	0	5	13	101
Medical U South Carolina	0	0	0	20	20	0	0	0	1	24
South Carolina State University	0	0	0	0	0	0	0	0	1	1
U of South Carolina at Columbia	10	9	3	18	18	0	17	22	143	243
South Dakota, total	0	0	0	8	6	2	8	4	46	70
South Dakota Sch of Mines & Tech	0	0	0	0	0	0	0	0	0	2
South Dakota State University	0	0	0	4	2	2	0	4	0	10
University of South Dakota	0	0	0	4	4	0	8	0	46	58
Tennessee, total	2	16	8	111	109	2	48	54	310	643
East Tennessee State University	0	0	0	5	5	0	0	0	16	21
Meharry Medical College	0	0	0	14	14	0	0	0	1	15
Mid-America Baptist Theol Sem	0	0	0	0	0	0	0	0	8	8
Middle Tennessee State U	0	0	0	0	0	0	0	2	7	10
Tennessee State University	0	0	0	0	0	0	6	1	28	35
Tennessee Technological U	0	0	0	0	0	0	0	0	0	3
University of Memphis	0	1	1	5	5	0	18	4	49	87
University Tennessee Knoxville	2	5	3	34	32	2	14	28	102	237
University Tennessee Memphis	0	0	0	9	9	0	0	0	3	12
Vanderbilt University	0	10	4	44	44	0	10	19	96	215
Texas, total	62	61	59	446	388	58	214	206	1,069	2,736
Baylor College of Medicine	0	0	0	43	43	0	0	0	1	44
Baylor University	0	1	0	8	8	0	1	3	20	33
Dallas Theological Seminary	0	0	0	0	0	0	0	0	6	6
Lamar University	0	0	0	0	0	0	0	0	1	2
Rice University	9	9	4	7	7	0	2	20	22	115
Sam Houston State University	0	0	0	0	0	0	0	7	0	7
Southern Methodist University	2	4	3	2	2	0	4	9	4	46
Southwestern Baptist Theol Sem	0	0	0	0	0	0	3	0	33	36
Stephen F Austin State U	0	0	0	1	0	1	0	0	0	1

See explanatory information, if any, and SOURCE at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	S&E rank*	Total S&E	Engineering						Physical sciences			
			Total	Chemical	Civil	Electrical	Mechanical	Other engineering	Total	Physics & astronomy	Chemistry	Other physical sciences
Texas, continued:												
Texas A&M University	9	420	115	17	14	29	15	40	51	12	39	0
Texas A&M University Commerce	282	5	0	0	0	0	0	0	0	0	0	0
Texas A&M University Kingsville	308	2	0	0	0	0	0	0	0	0	0	0
Texas Christian University	267	9	0	0	0	0	0	0	7	3	4	0
Texas Southern University	334	0	0	0	0	0	0	0	0	0	0	0
Texas Tech University	85	106	25	2	6	6	4	7	12	5	7	0
Texas Woman's University	207	23	0	0	0	0	0	0	0	0	0	0
University of Dallas	308	2	0	0	0	0	0	0	0	0	0	0
University of Houston	97	85	2	0	0	1	0	1	19	8	11	0
U North TX	110	72	1	0	0	0	0	1	15	3	12	0
U North TX Hlth Sci Ctr Ft Worth	267	9	0	0	0	0	0	0	0	0	0	0
University of St Thomas	334	0	0	0	0	0	0	0	0	0	0	0
U Texas at Arlington	121	62	35	0	2	12	8	13	4	2	2	0
U Texas at Austin	7	455	160	32	25	29	38	36	77	39	38	0
U Texas at Dallas	152	43	6	0	0	6	0	0	14	10	4	0
U Texas at El Paso	240	14	8	0	0	3	0	5	0	0	0	0
U Texas Hlth Sci Ctr	142	48	0	0	0	0	0	0	0	0	0	0
U Texas Hlth Sci Ctr San Antonio	223	20	0	0	0	0	0	0	0	0	0	0
U Texas Med Branch Galveston	203	24	0	0	0	0	0	0	0	0	0	0
U Texas SW Med Ctr Dallas	116	65	5	0	0	1	1	3	2	0	1	1
Utah, total	30	262	66	8	11	12	14	21	38	10	28	0
Brigham Young University	139	49	11	2	0	3	6	0	6	1	5	0
University of Utah	69	135	37	6	3	6	6	16	26	5	21	0
Utah State University	101	78	18	0	8	3	2	5	6	4	2	0
Vermont, total	46	48	9	0	1	2	2	4	2	0	2	0
Middlebury College	334	0	0	0	0	0	0	0	0	0	0	0
University of Vermont	142	48	9	0	1	2	2	4	2	0	2	0
Virginia, total	14	619	157	12	15	39	36	55	71	36	35	0
College of William and Mary	213	22	0	0	0	0	0	0	11	8	3	0
George Mason University	98	84	8	0	0	5	0	3	8	7	1	0
Hampton University	289	4	0	0	0	0	0	0	4	4	0	0
Old Dominion University	125	60	14	0	2	4	2	6	2	2	0	0
Regent University	334	0	0	0	0	0	0	0	0	0	0	0
Union Theo Sem & Presbyterian School of Chrstn Ed	334	0	0	0	0	0	0	0	0	0	0	0
University of Virginia	48	180	41	5	5	8	3	20	26	12	14	0
Virginia Commonwealth University	133	53	1	0	0	1	0	0	3	0	3	0
Virginia Polytechnic Inst & St U	37	216	93	7	8	21	31	26	17	3	14	0

See explanatory information, if any, and SOURCE at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	Earth, atmos., & ocean sciences	Mathematics	Computer sciences	Biological & agricultural sciences			Psychology	Social sciences	Non-S&E, total	Grand total, all fields
				Total	Biological	Agricultural				
Texas, continued:										
Texas A&M University	17	15	16	121	74	47	29	56	108	528
Texas A&M University Commerce	0	0	0	0	0	0	5	0	44	49
Texas A&M University Kingsville	0	0	0	2	0	2	0	0	26	28
Texas Christian University	0	0	0	1	1	0	1	0	15	24
Texas Southern University	0	0	0	0	0	0	0	0	21	21
Texas Tech University	1	6	1	24	16	8	32	5	62	168
Texas Woman's University	0	0	0	4	4	0	18	1	65	88
University of Dallas	0	0	0	0	0	0	1	1	2	4
University of Houston	1	4	3	13	13	0	27	16	98	183
U North TX	2	2	11	7	7	0	30	4	88	160
U North TX Hlth Sci Ctr Ft Worth	0	0	0	9	9	0	0	0	1	10
University of St Thomas	0	0	0	0	0	0	0	0	3	3
U Texas at Arlington	0	2	2	4	4	0	3	12	35	97
U Texas at Austin	20	16	16	58	58	0	40	68	379	834
U Texas at Dallas	6	1	3	8	8	0	2	3	7	50
U Texas at El Paso	4	0	0	0	0	0	2	0	0	14
U Texas Hlth Sci Ctr	0	1	0	46	46	0	0	1	18	66
U Texas Hlth Sci Ctr San Antonio	0	0	0	20	20	0	0	0	4	24
U Texas Med Branch Galveston	0	0	0	24	24	0	0	0	6	30
U Texas SW Med Ctr Dallas	0	0	0	44	44	0	14	0	0	65
Utah, total	6	12	8	50	51	9	40	32	91	353
Brigham Young University	0	3	2	5	4	1	19	3	14	63
University of Utah	5	7	6	32	32	0	9	13	65	200
Utah State University	1	2	0	23	15	8	12	16	12	90
Vermont, total	0	2	0	20	19	1	15	0	14	62
Middlebury College	0	0	0	0	0	0	0	0	3	3
University of Vermont	0	2	0	20	19	1	15	0	11	59
Virginia, total	22	26	38	157	131	26	82	66	376	995
College of William and Mary	5	2	1	1	1	0	0	2	21	43
George Mason University	1	3	25	4	2	2	22	13	31	115
Hampton University	0	0	0	0	0	0	0	0	0	4
Old Dominion University	4	3	1	19	19	0	15	2	14	74
Regent University	0	0	0	0	0	0	0	0	6	6
Union Theo Sem & Presbyterian School of Chrstn Ed	0	0	0	0	0	0	0	0	5	5
University of Virginia	9	6	6	42	42	0	25	25	123	303
Virginia Commonwealth University	0	0	0	45	45	0	4	0	33	86
Virginia Polytechnic Inst & St U	3	12	5	46	22	24	16	24	143	359

See explanatory information, if any, and SOURCE at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	S&E rank*	Total S&E	Engineering						Physical sciences			
			Total	Chemical	Civil	Electrical	Mechanical	Other engineering	Total	Physics & astronomy	Chemistry	Other physical sciences
Washington, total	21	449	86	12	14	25	10	25	61	29	31	1
Gonzaga University	334	0	0	0	0	0	0	0	0	0	0	0
Seattle Pacific University	334	0	0	0	0	0	0	0	0	0	0	0
Seattle University	334	0	0	0	0	0	0	0	0	0	0	0
University of Washington Seattle	17	322	65	8	10	17	9	21	48	23	24	1
Washington State University	75	127	21	4	4	8	1	4	13	6	7	0
West Virginia, total	39	101	25	1	7	2	7	8	6	3	3	0
Marshall University	289	4	0	0	0	0	0	0	0	0	0	0
West Virginia University	89	97	25	1	7	2	7	8	6	3	3	0
Wisconsin, total	13	641	135	20	17	25	28	45	89	36	51	2
Marquette University	196	25	17	0	1	7	1	8	2	0	2	0
Medical College of Wisconsin	238	15	0	0	0	0	0	0	1	0	0	1
U of Wisconsin Madison	1	537	109	20	12	16	26	35	78	34	44	0
U of Wisconsin Milwaukee	119	64	9	0	4	2	1	2	8	2	5	1
Wyoming, total	44	54	3	2	0	1	0	0	11	4	7	0
University of Wyoming	132	54	3	2	0	1	0	0	11	4	7	0
Puerto Rico, total	42	68	1	0	1	0	0	0	3	0	3	0
Caribbean Ctr Advanced Studies	168	36	0	0	0	0	0	0	0	0	0	0
Inter American U PR Metropolitan	334	0	0	0	0	0	0	0	0	0	0	0
U of PR Mayaguez Campus	289	4	1	0	1	0	0	0	0	0	0	0
U of PR Rio Piedras	187	28	0	0	0	0	0	0	3	0	3	0

See explanatory information, if any, and SOURCE at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by State, institution, and major field: 1998

[To increase readability, fields span two pages and institutions are repeated on facing pages.]

State and institution	Earth, atmos., & ocean sciences	Mathematics	Computer sciences	Biological & agricultural sciences			Psychology	Social sciences	Non-S&E, total	Grand total, all fields
				Total	Biological	Agricultural				
Washington, total	29	15	17	134	104	30	46	61	245	694
Gonzaga University	0	0	0	0	0	0	0	0	13	13
Seattle Pacific University	0	0	0	0	0	0	0	0	4	4
Seattle University	0	0	0	0	0	0	0	0	30	30
University of Washington Seattle	28	11	16	86	68	18	29	39	156	478
Washington State University	1	4	1	48	36	12	17	22	42	169
West Virginia, total	2	4	3	36	28	8	17	8	50	151
Marshall University	0	0	0	4	4	0	0	0	0	4
West Virginia University	2	4	3	32	24	8	17	8	50	147
Wisconsin, total	15	41	16	179	147	32	51	115	297	938
Marquette University	0	0	0	2	2	0	3	1	33	58
Medical College of Wisconsin	0	0	0	14	14	0	0	0	2	17
U of Wisconsin Madison	15	32	14	155	123	32	37	97	223	760
U of Wisconsin Milwaukee	0	9	2	8	8	0	11	17	39	103
Wyoming, total	11	6	1	13	10	3	9	0	9	63
University of Wyoming	11	6	1	13	10	3	9	0	9	63
Puerto Rico, total	2	0	0	6	6	0	56	0	35	103
Caribbean Ctr Advanced Studies	0	0	0	0	0	0	36	0	1	37
Inter American U PR Metropolitan	0	0	0	0	0	0	0	0	11	11
U of PR Mayaguez Campus	2	0	0	1	1	0	0	0	0	4
U of PR Rio Piedras	0	0	0	5	5	0	20	0	23	51

KEY: - = Not applicable
* = States are ranked 1 to 49 and institutions are ranked 1 to 334

SOURCE: National Science Foundation/Science Resources Studies, Survey of Earned Doctorates

Table 7. Postgraduation plans of science and engineering (S&E) doctorate recipients, by citizenship status and major field: 1998

Field of study	Total	Definite plans								
		Total with definite plans	In the United States					Abroad	Location unknown
			Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	All recipients								
Science and engineering, total	27,272	17,155	15,128	6,310	2,753	4,018	2,047	1,788	239
Engineering, total	5,919	3,708	3,199	620	285	1,875	419	461	48
Aeronautical/astronautical	242	156	142	23	4	70	45	13	1
Chemical	774	491	414	94	15	291	14	69	8
Civil	650	360	290	75	58	106	51	68	2
Electrical	1,593	1,047	934	102	68	668	96	101	12
Industrial	227	140	112	5	25	71	11	23	5
Materials/metallurgical	565	367	313	85	10	189	29	49	5
Mechanical	1,022	632	557	122	51	302	82	66	9
Other engineering	846	515	437	114	54	178	91	72	6
Sciences, total	21,353	13,447	11,929	5,690	2,468	2,143	1,628	1,327	191
Physical sciences, total	3,825	2,539	2,301	1,302	162	690	147	213	25
Astronomy	208	143	119	89	7	16	7	24	0
Chemistry	2,217	1,485	1,381	792	100	431	58	90	14
Physics	1,376	893	786	415	51	239	81	96	11
Other physical sciences	24	18	15	6	4	4	1	3	0
Earth, atmospheric, and ocean sciences	814	506	444	210	80	103	51	56	6
Mathematics	1,177	712	603	166	234	143	60	93	16
Computer sciences	923	603	547	74	153	267	53	45	11
Biological sciences	5,848	3,915	3,617	2,775	263	277	302	257	41
Agricultural sciences	1,035	591	428	180	87	103	58	159	4
Psychology	3,681	2,128	2,033	735	456	294	548	68	27
Social sciences	4,050	2,453	1,956	248	1,033	266	409	436	61
Non-S&E, total	15,411	9,385	8,365	541	4,558	676	2,590	755	265
Grand total, all fields	42,683	26,540	23,493	6,851	7,311	4,694	4,637	2,543	504

See explanatory information, if any, and SOURCE at end of table.

Table 7. Postgraduation plans of science and engineering (S&E) doctorate recipients, by citizenship status and major field: 1998

Field of study	Total	Definite plans								
		Total with definite plans	In the United States					Abroad	Location unknown
			Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	U.S. citizens								
Science and engineering, total	16,109	11,062	10,504	4,044	2,307	2,386	1,767	396	162
Engineering, total	2,543	1,831	1,748	253	215	929	351	58	25
Aeronautical/astronautical	138	111	106	12	2	49	43	4	1
Chemical	326	232	220	40	13	158	9	10	2
Civil	242	164	161	24	50	44	43	2	1
Electrical	631	477	455	37	46	291	81	11	11
Industrial	82	62	60	3	19	28	10	0	2
Materials/metallurgical	265	189	174	29	10	110	25	14	1
Mechanical	431	312	299	51	33	150	65	11	2
Other engineering	428	284	273	57	42	99	75	6	5
Sciences, total	13,566	9,231	8,756	3,791	2,092	1,457	1,416	338	137
Physical sciences, total	2,123	1,536	1,450	746	141	451	112	71	15
Astronomy	132	98	91	67	7	12	5	7	0
Chemistry	1,275	939	895	454	91	305	45	36	8
Physics	700	486	452	219	39	133	61	27	7
Other physical sciences	16	13	12	6	4	1	1	1	0
Earth, atmospheric, and ocean sciences	497	334	309	138	70	60	41	21	4
Mathematics	573	393	369	77	171	74	47	16	8
Computer sciences	467	333	323	34	111	129	49	3	7
Biological sciences	3,726	2,670	2,547	1,862	237	204	244	92	31
Agricultural sciences	461	293	268	71	75	73	49	23	2
Psychology	3,167	1,972	1,922	683	426	282	531	23	27
Social sciences	2,552	1,700	1,568	180	861	184	343	89	43
Non-S&E, total	12,109	8,036	7,604	418	4,140	562	2,484	194	238
Grand total, all fields	28,218	19,098	18,108	4,462	6,447	2,948	4,251	590	400

See explanatory information, if any, and SOURCE at end of table.

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Table 7. Postgraduation plans of science and engineering (S&E) doctorate recipients, by citizenship status and major field: 1998

Field of study	Total	Definite plans								
		Total with definite plans	In the United States					Abroad	Location unknown
			Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	Non-U.S. citizens with permanent visas								
Science and engineering, total	2,016	1,228	1,135	511	107	422	95	71	22
Engineering, total	478	297	282	42	19	203	18	11	4
Aeronautical/astronautical	13	9	9	0	1	6	2	0	0
Chemical	46	28	28	6	1	21	0	0	0
Civil	51	22	20	5	4	8	3	2	0
Electrical	166	113	109	9	5	90	5	4	0
Industrial	17	9	7	0	0	6	1	1	1
Materials/metallurgical	48	31	30	9	0	19	2	0	1
Mechanical	81	49	45	7	5	30	3	2	2
Other engineering	56	36	34	6	3	23	2	2	0
Sciences, total	1,538	931	853	469	88	219	77	60	18
Physical sciences, total	312	194	182	82	7	82	11	9	3
Astronomy	16	10	6	5	0	0	1	4	0
Chemistry	180	106	104	46	3	49	6	1	1
Physics	114	76	70	31	4	31	4	4	2
Other physical sciences	2	2	2	0	0	2	0	0	0
Earth, atmospheric, and ocean sciences	62	38	35	16	4	12	3	3	0
Mathematics	93	52	44	14	10	17	3	6	2
Computer sciences	84	59	56	5	11	38	2	1	2
Biological sciences	553	367	352	286	7	33	26	10	5
Agricultural sciences	79	41	36	23	3	7	3	5	0
Psychology	92	52	47	22	11	4	10	5	0
Social sciences	263	128	101	21	35	26	19	21	6
Non-S&E, total	680	357	296	30	167	38	61	49	12
Grand total, all fields	2,696	1,585	1,431	541	274	460	156	120	4

See explanatory information, if any, and SOURCE at end of table.

Table 7. Postgraduation plans of science and engineering (S&E) doctorate recipients, by citizenship status and major field: 1998

Field of study	Total	Definite plans								
		Total with definite plans	In the United States					Abroad	Location unknown
			Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	Non-U.S. citizens with temporary visas								
Science and engineering, total	7,143	4,512	3,283	1,664	313	1,147	159	1,184	45
Engineering, total	2,392	1,473	1,099	311	47	700	41	357	17
Aeronautical/astronautical	66	35	26	11	1	14	0	9	0
Chemical	353	222	158	47	1	106	4	58	6
Civil	284	156	101	42	4	51	4	55	0
Electrical	660	430	349	55	15	271	8	80	1
Industrial	113	64	42	2	6	34	0	20	2
Materials/metallurgical	214	137	105	45	0	59	1	30	2
Mechanical	427	256	202	61	12	117	12	49	5
Other engineering	275	173	116	48	8	48	12	56	1
Sciences, total	4,751	3,039	2,184	1,353	266	447	118	827	28
Physical sciences, total	1,113	754	630	447	11	151	21	118	6
Astronomy	45	33	22	17	0	4	1	11	0
Chemistry	610	410	355	270	5	73	7	50	5
Physics	454	308	252	160	6	73	13	55	1
Other physical sciences	4	3	1	0	0	1	0	2	0
Earth, atmospheric, and ocean sciences	200	128	96	54	6	29	7	31	1
Mathematics	419	252	181	72	51	51	7	68	3
Computer sciences	309	195	157	32	28	95	2	36	2
Biological sciences	1,230	825	681	599	18	37	27	140	4
Agricultural sciences	418	235	116	81	7	23	5	117	2
Psychology	151	93	57	26	18	8	5	36	0
Social sciences	911	557	266	42	127	53	44	281	10
Non-S&E, total	1,499	876	424	87	235	69	33	440	12
Grand total, all fields	8,642	5,388	3,707	1,751	548	1,216	192	1,624	57

NOTE: Details may not add to totals because of persons with unknown citizenship.

SOURCE: National Science Foundation/Science Resources Studies, Survey of Earned Doctorates

Table 8. Percentage distribution of definite postgraduation plans of science and engineering (S&E) doctorate recipients, by citizenship status and major field: 1998

Field of study	Definite plans	In the United States					Abroad	Location unknown
		Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	All recipients							
Science and engineering, total	100.0	88.2	36.8	16.0	23.4	11.9	10.4	1.4
Engineering, total	100.0	86.3	16.7	7.7	50.6	11.3	12.4	1.3
Aeronautical/astronautical	100.0	91.0	14.7	2.6	44.9	28.8	8.3	.6
Chemical	100.0	84.3	19.1	3.1	59.3	2.9	14.1	1.6
Civil	100.0	80.6	20.8	16.1	29.4	14.2	18.9	.6
Electrical	100.0	89.2	9.7	6.5	63.8	9.2	9.6	1.1
Industrial	100.0	80.0	3.6	17.9	50.7	7.9	16.4	3.6
Materials/metallurgical	100.0	85.3	23.2	2.7	51.5	7.9	13.4	1.4
Mechanical	100.0	88.1	19.3	8.1	47.8	13.0	10.4	1.4
Other engineering	100.0	84.9	22.1	10.5	34.6	17.7	14.0	1.2
Sciences, total	100.0	88.7	42.3	18.4	15.9	12.1	9.9	1.4
Physical sciences, total	100.0	90.6	51.3	6.4	27.2	5.8	8.4	1.0
Astronomy	100.0	83.2	62.2	4.9	11.2	4.9	16.8	0
Chemistry	100.0	93.0	53.3	6.7	29.0	3.9	6.1	.9
Physics	100.0	88.0	46.5	5.7	26.8	9.1	10.8	1.2
Other physical sciences	100.0	83.3	33.3	22.2	22.2	5.6	16.7	0
Earth, atmospheric, and ocean sciences	100.0	87.7	41.5	15.8	20.4	10.1	11.1	1.2
Mathematics	100.0	84.7	23.3	32.9	20.1	8.4	13.1	2.2
Computer sciences	100.0	90.7	12.3	25.4	44.3	8.8	7.5	1.8
Biological sciences	100.0	92.4	70.9	6.7	7.1	7.7	6.6	1.0
Agricultural sciences	100.0	72.4	30.5	14.7	17.4	9.8	26.9	.7
Psychology	100.0	95.5	34.5	21.4	13.8	25.8	3.2	1.3
Social sciences	100.0	79.7	10.1	42.1	10.8	16.7	17.8	2.5
Non-S&E, total	100.0	89.1	5.8	18.6	7.2	27.6	8.0	2.8
Grand total, all fields	100.0	88.5	25.8	27.5	17.7	17.5	9.6	1.9
	U.S. citizens							
Science and engineering, total	100.0	95.0	36.6	20.9	21.6	16.0	3.6	1.5
Engineering, total	100.0	95.5	13.8	11.7	50.7	19.2	3.2	1.4
Aeronautical/astronautical	100.0	95.5	10.8	1.8	44.1	38.7	3.6	.9
Chemical	100.0	94.8	17.2	5.6	68.1	3.9	4.3	.9
Civil	100.0	98.2	14.6	30.5	26.8	26.2	1.2	.6
Electrical	100.0	95.4	7.8	9.6	61.0	17.0	2.3	2.3
Industrial	100.0	96.8	4.8	30.6	45.2	16.1	0	3.2
Materials/metallurgical	100.0	92.1	15.3	5.3	58.2	13.2	7.4	.5
Mechanical	100.0	95.8	16.3	10.6	48.1	20.8	3.5	.6
Other engineering	100.0	96.1	20.1	14.8	34.9	26.4	2.1	1.8
Sciences, total	100.0	94.9	41.1	22.7	15.8	15.3	3.7	1.5
Physical sciences, total	100.0	94.4	48.6	9.2	29.4	7.3	4.6	1.0
Astronomy	100.0	92.9	68.4	7.1	12.2	5.1	7.1	0
Chemistry	100.0	95.3	48.3	9.7	32.5	4.8	3.8	.9
Physics	100.0	93.0	45.1	8.0	27.4	12.6	5.6	1.4
Other physical sciences	100.0	92.3	46.2	30.8	7.7	7.7	7.7	0
Earth, atmospheric, and ocean sciences	100.0	92.5	41.3	21.0	18.0	12.3	6.3	1.2
Mathematics	100.0	93.9	19.6	43.5	18.8	12.0	4.1	2.0
Computer sciences	100.0	97.0	10.2	33.3	38.7	14.7	.9	2.1
Biological sciences	100.0	95.4	69.7	8.9	7.6	9.1	3.4	1.2
Agricultural sciences	100.0	91.5	24.2	25.6	24.9	16.7	7.8	.7
Psychology	100.0	97.5	34.6	21.6	14.3	26.9	1.2	1.4
Social sciences	100.0	92.2	10.6	50.6	10.8	20.2	5.2	2.5
Non-S&E, total	100.0	94.6	5.2	51.5	7.0	30.9	2.4	3.0
Grand total, all fields	100.0	94.8	23.4	33.8	15.4	22.3	3.1	2.1

See explanatory information, if any, and SOURCE at end of table.

Table 8. Percentage distribution of definite postgraduation plans of science and engineering (S&E) doctorate recipients, by citizenship status and major field: 1998

Field of study	Definite plans	In the United States					Abroad	Location unknown
		Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	Non-U.S. citizens with permanent visas							
Science and engineering, total	100.0	92.4	41.6	8.7	34.4	7.7	5.8	1.8
Engineering, total	100.0	94.9	14.1	6.4	68.4	6.1	3.7	1.3
Aeronautical/astronautical	100.0	100.0	0	11.1	66.7	22.2	0	0
Chemical	100.0	100.0	21.4	3.6	75.0	0	0	0
Civil	100.0	90.9	22.7	18.2	36.4	13.6	9.1	0
Electrical	100.0	96.5	8.0	4.4	79.6	4.4	3.5	0
Industrial	100.0	77.8	0	0	66.7	11.1	11.1	11.1
Materials/metallurgical	100.0	96.8	29.0	0	61.3	6.5	0	3.2
Mechanical	100.0	91.8	14.3	10.2	61.2	6.1	4.1	4.1
Other engineering	100.0	94.4	16.7	8.3	63.9	5.6	5.6	0
Sciences, total	100.0	91.6	50.4	9.5	23.5	8.3	6.4	1.9
Physical sciences, total	100.0	93.8	42.3	3.6	42.3	5.7	4.6	1.5
Astronomy	100.0	60.0	50.0	0	0	10.0	40.0	0
Chemistry	100.0	98.1	43.4	2.8	46.2	5.7	9	9
Physics	100.0	92.1	40.8	5.3	40.8	5.3	5.3	2.6
Other physical sciences	100.0	100.0	0	0	100.0	0	0	0
Earth, atmospheric, and ocean sciences	100.0	92.1	42.1	10.5	31.6	7.9	7.9	0
Mathematics	100.0	84.6	26.9	19.2	32.7	5.8	11.5	3.8
Computer sciences	100.0	94.9	8.5	18.6	64.4	3.4	1.7	3.4
Biological sciences	100.0	95.9	77.9	1.9	9.0	7.1	2.7	1.4
Agricultural sciences	100.0	87.8	56.1	7.3	17.1	7.3	12.2	0
Psychology	100.0	90.4	42.3	21.2	7.7	19.2	9.6	0
Social sciences	100.0	78.9	16.4	27.3	20.3	14.8	16.4	4.7
Non-S&E, total	100.0	82.9	8.4	46.8	10.6	17.1	13.7	3.4
Grand total, all fields	100.0	90.3	34.1	17.3	29.0	9.8	7.6	2.1
	Non-U.S. citizens with temporary visas							
Science and engineering, total	100.0	72.8	36.9	6.9	25.4	3.5	26.2	1.0
Engineering, total	100.0	74.6	21.1	3.2	47.5	2.8	24.2	1.2
Aeronautical/astronautical	100.0	74.3	31.4	2.9	40.0	0	25.7	0
Chemical	100.0	71.2	21.2	5	47.7	1.8	26.1	2.7
Civil	100.0	64.7	26.9	2.6	32.7	2.6	35.3	0
Electrical	100.0	81.2	12.8	3.5	63.0	1.9	18.6	2
Industrial	100.0	65.6	3.1	9.4	53.1	0	31.3	3.1
Materials/metallurgical	100.0	76.6	32.8	0	43.1	7	21.9	1.5
Mechanical	100.0	78.9	23.8	4.7	45.7	4.7	19.1	2.0
Other engineering	100.0	67.1	27.7	4.6	27.7	6.9	32.4	6
Sciences, total	100.0	71.9	44.5	8.8	14.7	3.9	27.2	9
Physical sciences, total	100.0	83.6	59.3	1.5	20.0	2.8	15.6	8
Astronomy	100.0	66.7	51.5	0	12.1	3.0	33.3	0
Chemistry	100.0	86.6	65.9	1.2	17.8	1.7	12.2	1.2
Physics	100.0	81.8	51.9	1.9	23.7	4.2	17.9	3
Other physical sciences	100.0	33.3	0	0	33.3	0	66.7	0
Earth, atmospheric, and ocean sciences	100.0	75.0	42.2	4.7	22.7	5.5	24.2	8
Mathematics	100.0	71.8	28.6	20.2	20.2	2.8	27.0	1.2
Computer sciences	100.0	80.5	16.4	14.4	48.7	1.0	18.5	1.0
Biological sciences	100.0	82.5	72.6	2.2	4.5	3.3	17.0	5
Agricultural sciences	100.0	49.4	34.5	3.0	9.8	2.1	49.8	9
Psychology	100.0	61.3	28.0	19.4	8.6	5.4	38.7	0
Social sciences	100.0	47.8	7.5	22.8	9.5	7.9	50.4	1.8
Non-S&E, total	100.0	48.4	9.9	26.8	7.9	3.8	50.2	1.4
Grand total, all fields	100.0	68.8	32.5	10.2	22.6	3.6	30.1	1.1

SOURCE: National Science Foundation/Science Resources Studies, Survey of Earned Doctorates

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Table 9. Postgraduation plans of science and engineering (S&E) doctorate recipients, by sex and major field: 1998

[U.S. citizens and non-U.S. citizens with permanent visas]

Field of study	Total	Definite plans								
		Total with definite plans	In the United States					Abroad	Location unknown
			Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	All recipients								
Science and engineering, total	18,125	12,290	11,639	4,555	2,414	2,808	1,862	467	184
Engineering, total	3,021	2,128	2,030	295	234	1,132	369	69	29
Aeronautical/astronautical	151	120	115	12	3	55	45	4	1
Chemical	372	260	248	46	14	179	9	10	2
Civil	293	186	181	29	54	52	46	4	1
Electrical	797	590	564	46	51	381	86	15	11
Industrial	99	71	67	3	19	34	11	1	3
Materials/metallurgical	313	220	204	38	10	129	27	14	2
Mechanical	512	361	344	58	38	180	68	13	4
Other engineering	484	320	307	63	45	122	77	8	5
Sciences, total	15,104	10,162	9,609	4,260	2,180	1,676	1,493	398	155
Physical sciences, total	2,435	1,730	1,632	828	148	533	123	80	18
Astronomy	148	108	97	72	7	12	6	11	0
Chemistry	1,455	1,045	999	500	94	354	51	37	9
Physics	814	562	522	250	43	164	65	31	9
Other physical sciences	18	15	14	6	4	3	1	1	0
Earth, atmospheric, and ocean sciences	559	372	344	154	74	72	44	24	4
Mathematics	666	445	413	91	181	91	50	22	10
Computer sciences	551	392	379	39	122	167	51	4	9
Biological sciences	4,279	3,037	2,899	2,148	244	237	270	102	36
Agricultural sciences	540	334	304	94	78	80	52	28	2
Psychology	3,259	2,024	1,969	705	437	286	541	28	27
Social sciences	2,815	1,828	1,669	201	896	210	362	110	49
Non-S&E, total	12,789	8,393	7,900	448	4,307	600	2,545	243	250
Grand total, all fields	30,914	20,683	19,539	5,003	6,721	3,408	4,407	710	434

See explanatory information, if any, and SOURCE at end of table.

Table 9. Postgraduation plans of science and engineering (S&E) doctorate recipients, by sex and major field: 1998

[U.S. citizens and non-U.S. citizens with permanent visas]

Field of study	Total	Definite plans							
		Total with definite plans	In the United States				Abroad	Location unknown
			Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	Women								
Science and engineering, total	7,124	4,656	4,437	1,907	1,093	693	744	146	73
Engineering, total	447	295	287	54	51	148	34	6	2
Aeronautical/astronautical	11	11	10	0	1	6	3	1	0
Chemical	76	52	52	11	7	33	1	0	0
Civil	57	33	33	7	14	9	3	0	0
Electrical	91	62	61	6	12	34	9	0	1
Industrial	23	14	14	1	3	8	2	0	0
Materials/metallurgical	51	34	33	5	2	23	3	1	0
Mechanical	50	36	32	9	4	13	6	4	0
Other engineering	88	53	52	15	8	22	7	0	1
Sciences, total	6,677	4,361	4,150	1,853	1,042	545	710	140	71
Physical sciences, total	599	412	386	187	47	122	30	22	4
Astronomy	28	19	17	13	1	1	2	2	0
Chemistry	458	326	306	147	35	107	17	17	3
Physics	106	60	57	25	9	13	10	2	1
Other physical sciences	7	7	6	2	2	1	1	1	0
Earth, atmospheric, and ocean sciences	169	111	99	45	21	15	18	10	2
Mathematics	197	132	122	23	66	22	11	5	5
Computer sciences	120	79	77	6	35	26	10	0	2
Biological sciences	1,909	1,324	1,267	955	126	81	105	43	14
Agricultural sciences	181	107	102	41	27	20	14	5	0
Psychology	2,204	1,329	1,295	497	266	176	356	14	20
Social sciences	1,298	867	802	99	454	83	166	41	24
Non-S&E, total	7,346	4,842	4,582	288	2,454	308	1,532	105	155
Grand total, all fields	14,470	9,498	9,019	2,195	3,547	1,001	2,276	251	228

See explanatory information, if any, and SOURCE at end of table.

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Table 9. Postgraduation plans of science and engineering (S&E) doctorate recipients, by sex and major field: 1998

[U.S. citizens and non-U.S. citizens with permanent visas]

Field of study	Total	Definite plans							
		Total with definite plans	In the United States				Abroad	Location unknown
			Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	Men								
Science and engineering, total	11,001	7,634	7,202	2,648	1,321	2,115	1,118	321	111
Engineering, total	2,574	1,833	1,743	241	183	984	335	63	27
Aeronautical/astronautical	140	109	105	12	2	49	42	3	1
Chemical	296	208	196	35	7	146	8	10	2
Civil	236	153	148	22	40	43	43	4	1
Electrical	706	528	503	40	39	347	77	15	10
Industrial	76	57	53	2	16	26	9	1	3
Materials/metallurgical	262	186	171	33	8	106	24	13	2
Mechanical	462	325	312	49	34	167	62	9	4
Other engineering	396	267	255	48	37	100	70	8	4
Sciences, total	8,427	5,801	5,459	2,407	1,138	1,131	783	258	84
Physical sciences, total	1,836	1,318	1,246	641	101	411	93	58	14
Astronomy	120	89	80	59	6	11	4	9	0
Chemistry	997	719	693	353	59	247	34	20	6
Physics	708	502	465	225	34	151	55	29	8
Other physical sciences	11	8	8	4	2	2	0	0	0
Earth, atmospheric, and ocean sciences	390	261	245	109	53	57	26	14	2
Mathematics	469	313	291	68	115	69	39	17	5
Computer sciences	431	313	302	33	87	141	41	4	7
Biological sciences	2,370	1,713	1,632	1,193	118	156	165	59	22
Agricultural sciences	359	227	202	53	51	60	38	23	2
Psychology	1,055	695	674	208	171	110	185	14	7
Social sciences	1,517	961	867	102	442	127	196	69	25
Non-S&E, total	5,443	3,551	3,318	160	1,853	292	1,013	138	95
Grand total, all fields	16,444	11,185	10,520	2,808	3,174	2,407	2,131	459	206

SOURCE: National Science Foundation/Science Resources Studies, Survey of Earned Doctorates

Table 10. Percentage distribution of definite postgraduation plans of science and engineering (S&E) doctorate recipients, by sex and major field: 1998

[U.S. citizens and non-U.S. citizens with permanent visas]

Field of study	Definite plans	In the United States					Abroad	Location unknown
		Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	All recipients							
Science and engineering, total	100.0	94.7	37.1	19.6	22.8	15.2	3.8	1.5
Engineering, total	100.0	95.4	13.9	11.0	53.2	17.3	3.2	1.4
Aeronautical/astronautical	100.0	95.8	10.0	2.5	45.8	37.5	3.3	.8
Chemical	100.0	95.4	17.7	5.4	68.8	3.5	3.8	.8
Civil	100.0	97.3	15.6	29.0	28.0	24.7	2.2	.5
Electrical	100.0	95.6	7.8	8.6	64.6	14.6	2.5	1.9
Industrial	100.0	94.4	4.2	26.8	47.9	15.5	1.4	4.2
Materials/metallurgical	100.0	92.7	17.3	4.5	58.6	12.3	6.4	.9
Mechanical	100.0	95.3	16.1	10.5	49.9	18.8	3.6	1.1
Other engineering	100.0	95.9	19.7	14.1	38.1	24.1	2.5	1.6
Sciences, total	100.0	94.6	41.9	21.5	16.5	14.7	3.9	1.5
Physical sciences, total	100.0	94.3	47.9	8.6	30.8	7.1	4.6	1.0
Astronomy	100.0	89.8	66.7	6.5	11.1	5.6	10.2	0
Chemistry	100.0	95.6	47.8	9.0	33.9	4.9	3.5	.9
Physics	100.0	92.9	44.5	7.7	29.2	11.6	5.5	1.6
Other physical sciences	100.0	93.3	40.0	26.7	20.0	6.7	6.7	0
Earth, atmospheric, and ocean sciences	100.0	92.5	41.4	19.9	19.4	11.8	6.5	1.1
Mathematics	100.0	92.8	20.4	40.7	20.4	11.2	4.9	2.2
Computer sciences	100.0	96.7	9.9	31.1	42.6	13.0	1.0	2.3
Biological sciences	100.0	95.5	70.7	8.0	7.8	8.9	3.4	1.2
Agricultural sciences	100.0	91.0	28.1	23.4	24.0	15.6	8.4	.6
Psychology	100.0	97.3	34.8	21.6	14.1	26.7	1.4	1.3
Social sciences	100.0	91.3	11.0	49.0	11.5	19.8	6.0	2.7
Non-S&E, total	100.0	94.1	5.3	51.3	7.1	30.3	2.9	3.0
Grand total, all fields	100.0	94.5	24.2	32.5	16.5	21.3	3.4	2.1

See explanatory information, if any, and SOURCE at end of table.

Table 10. Percentage distribution of definite postgraduation plans of science and engineering (S&E) doctorate recipients, by sex and major field: 1998

[U.S. citizens and non-U.S. citizens with permanent visas]

Field of study	Definite plans	In the United States					Abroad	Location unknown
		Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	Women							
Science and engineering, total	100.0	95.3	41.0	23.5	14.9	16.0	3.1	1.6
Engineering, total	100.0	97.3	18.3	17.3	50.2	11.5	2.0	.7
Aeronautical/astronautical	100.0	90.9	0	9.1	54.5	27.3	9.1	0
Chemical	100.0	100.0	21.2	13.5	63.5	1.9	0	0
Civil	100.0	100.0	21.2	42.4	27.3	9.1	0	0
Electrical	100.0	98.4	9.7	19.4	54.8	14.5	0	1.6
Industrial	100.0	100.0	7.1	21.4	57.1	14.3	0	0
Materials/metallurgical	100.0	97.1	14.7	5.9	67.6	8.8	2.9	0
Mechanical	100.0	88.9	25.0	11.1	36.1	16.7	11.1	0
Other engineering	100.0	98.1	28.3	15.1	41.5	13.2	0	1.9
Sciences, total	100.0	95.2	42.5	23.9	12.5	16.3	3.2	1.6
Physical sciences, total	100.0	93.7	45.4	11.4	29.6	7.3	5.3	1.0
Astronomy	100.0	89.5	68.4	5.3	5.3	10.5	10.5	0
Chemistry	100.0	93.9	45.1	10.7	32.8	5.2	5.2	.9
Physics	100.0	95.0	41.7	15.0	21.7	16.7	3.3	1.7
Other physical sciences	100.0	85.7	28.6	28.6	14.3	14.3	14.3	0
Earth, atmospheric, and ocean sciences	100.0	89.2	40.5	18.9	13.5	16.2	9.0	1.8
Mathematics	100.0	92.4	17.4	50.0	16.7	8.3	3.8	3.8
Computer sciences	100.0	97.5	7.6	44.3	32.9	12.7	0	2.5
Biological sciences	100.0	95.7	72.1	9.5	6.1	7.9	3.2	1.1
Agricultural sciences	100.0	95.3	38.3	25.2	18.7	13.1	4.7	0
Psychology	100.0	97.4	37.4	20.0	13.2	26.8	1.1	1.5
Social sciences	100.0	92.5	11.4	52.4	9.6	19.1	4.7	2.8
Non-S&E, total	100.0	94.6	5.9	50.7	6.4	31.6	2.2	3.2
Grand total, all fields	100.0	95.0	23.1	37.3	10.5	24.0	2.6	2.4

See explanatory information, if any, and SOURCE at end of table.

Table 10. Percentage distribution of definite postgraduation plans of science and engineering (S&E) doctorate recipients, by sex and major field: 1998

[U.S. citizens and non-U.S. citizens with permanent visas]

Field of study	Definite plans	In the United States					Abroad	Location unknown
		Total in U.S.	Postdoc study	Academic employment	Industry employment	Other		
	Men							
Science and engineering, total	100.0	94.3	34.7	17.3	27.7	14.6	4.2	1.5
Engineering, total	100.0	95.1	13.1	10.0	53.7	18.3	3.4	1.5
Aeronautical/astronautical	100.0	96.3	11.0	1.8	45.0	38.5	2.8	.9
Chemical	100.0	94.2	16.8	3.4	70.2	3.8	4.8	1.0
Civil	100.0	96.7	14.4	26.1	28.1	28.1	2.6	.7
Electrical	100.0	95.3	7.6	7.4	65.7	14.6	2.8	1.9
Industrial	100.0	93.0	3.5	28.1	45.6	15.8	1.8	5.3
Materials/metallurgical	100.0	91.9	17.7	4.3	57.0	12.9	7.0	1.1
Mechanical	100.0	96.0	15.1	10.5	51.4	19.1	2.8	1.2
Other engineering	100.0	95.5	18.0	13.9	37.5	26.2	3.0	1.5
Sciences, total	100.0	94.1	41.5	19.6	19.5	13.5	4.4	1.4
Physical sciences, total	100.0	94.5	48.6	7.7	31.2	7.1	4.4	1.1
Astronomy	100.0	89.9	66.3	6.7	12.4	4.5	10.1	0
Chemistry	100.0	96.4	49.1	8.2	34.4	4.7	2.8	.8
Physics	100.0	92.6	44.8	6.8	30.1	11.0	5.8	1.6
Other physical sciences	100.0	100.0	50.0	25.0	25.0	0	0	0
Earth, atmospheric, and ocean sciences	100.0	93.9	41.8	20.3	21.8	10.0	5.4	.8
Mathematics	100.0	93.0	21.7	36.7	22.0	12.5	5.4	1.6
Computer sciences	100.0	96.5	10.5	27.8	45.0	13.1	1.3	2.2
Biological sciences	100.0	95.3	69.6	6.9	9.1	9.6	3.4	1.3
Agricultural sciences	100.0	89.0	23.3	22.5	26.4	16.7	10.1	.9
Psychology	100.0	97.0	29.9	24.6	15.8	26.6	2.0	1.0
Social sciences	100.0	90.2	10.6	46.0	13.2	20.4	7.2	2.6
Non-S&E, total	100.0	93.4	4.5	52.2	8.2	28.5	3.9	2.7
Grand total, all fields	100.0	94.1	25.1	28.4	21.5	19.1	4.1	1.8

SOURCE: National Science Foundation/Science Resources Studies, Survey of Earned Doctorates

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